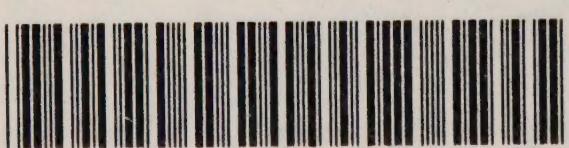
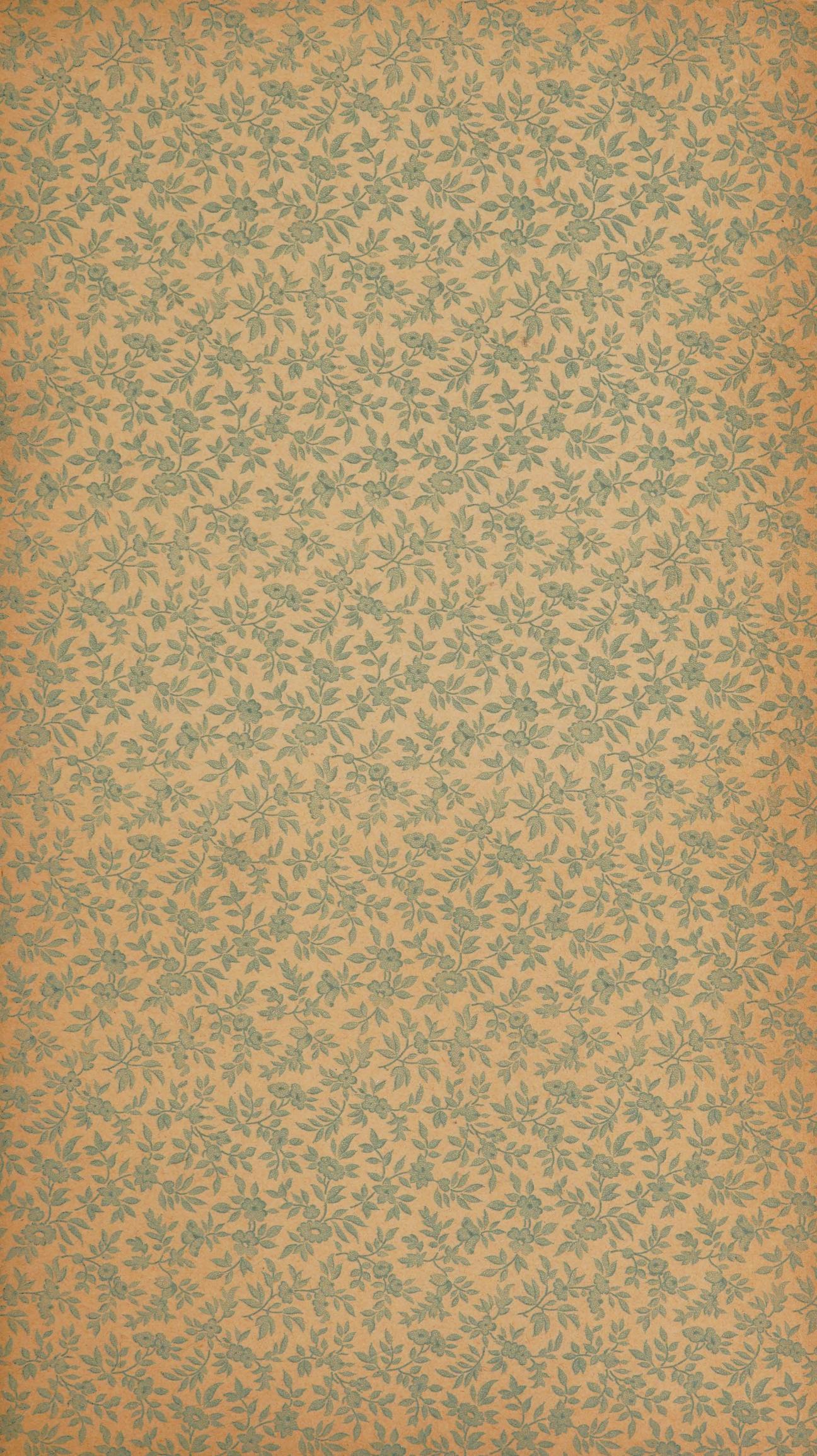


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1895

NEW HAMPSHIRE  
**MEDICAL SOCIETY**  
—  
1895



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## TRANSACTIONS

OF THE

# NEW HAMPSHIRE MEDICAL SOCIETY

AT THE

## ONE HUNDRED AND FOURTH ANNIVERSARY

HELD AT

CONCORD, JUNE 3 AND 4, 1895.

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Concord, N. H.:

PRINTED BY THE REPUBLICAN PRESS ASSOCIATION.

1895.

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## NEW HAMPSHIRE MEDICAL SOCIETY.

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### OFFICERS FOR 1895-'96.

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#### PRESIDENT.

E. F. McQUESTEN, M. D., Nashua.

#### VICE-PRESIDENT.

A. P. RICHARDSON, M. D., Walpole.

#### TREASURER.

M. H. FELT, M. D., Hillsborough.

#### SECRETARY.

G. P. CONN, M. D., Concord.

#### EXECUTIVE COMMITTEE.

CHARLES R. WALKER, M. D., Concord.

GEO. D. TOWNE, M. D., Manchester.

F. A. STILLINGS, M. D., Concord.

W. T. SMITH, M. D., Hanover.

F. E. KITTREDGE, M. D., Nashua.

#### ANNIVERSARY CHAIRMAN.

A. NOEL SMITH, M. D., Dover.

## TRANSACTIONS.

## COMMITTEE OF ARRANGEMENTS.

D. E. SULLIVAN, M. D., Concord.  
A. K. DAY, M. D., Concord.  
C. W. LOVEJOY, M. D., Concord.  
N. W. McMURPHY, M. D., Concord.  
CHAUNCEY ADAMS, M. D., Concord.

## NECROLOGY.

JOHN J. BERRY, M. D., Portsmouth.

## COUNCIL.

G. D. FROST, M. D., Hanover.  
J. W. STAPLES, M. D., Franklin Falls.  
G. S. GOVE, M. D., Whitefield.  
G. H. SALTMARSH, M. D., Lakeport.  
J. W. PARSONS, M. D., Portsmouth.  
D. L. STOKES, M. D., Rochester.  
C. B. HAMMOND, M. D., Nashua.  
C. A. FAIRBANKS, M. D., Dover.  
C. F. STARR, M. D., Manchester.  
A. K. DAY, M. D., Concord.  
L. J. FRINK, M. D., Bartlett.  
G. W. McGREGOR, M. D., Littleton.  
J. WALLACE-RUSSELL, M. D., Concord.  
ELIZABETH B. REED, M. D., Keene.  
L. B. MORRILL, M. D., Centre Harbor.  
J. T. GREELEY, M. D., Nashua.  
G. H. LARABEE, M. D., Suncook.  
E. B. HODSDON, M. D., Centre Sandwich.  
I. G. ANTHOINE, M. D., Nashua.  
W. M. MEGRATH, M. D., Loudon.

## BOARD OF CENSORS.

DANIEL S. ADAMS, M. D., Manchester.  
GEORGE D. TOWNE, M. D., Manchester.  
THOMAS HILAND, M. D., Concord.

OFFICERS.

5

JOHN W. PARSONS, M. D., Portsmouth.  
CHARLES B. HAMMOND, M. D., Nashua.  
CHARLES B. DRAKE, M. D., West Lebanon.  
LEONARD JARVIS, M. D., Claremont.  
J. C. EASTMAN, M. D., Hampstead.  
IRA J. PROUTY, M. D., Keene.  
M. C. LATHROP, M. D., Dover.

OFFICERS OF THE BOARD TO ISSUE LICENSES.

DANIEL S. ADAMS, M. D., President, Manchester.  
THOMAS HILAND, M. D., Secretary, Concord.  
JOHN W. PARSONS, M. D., Associate, Portsmouth.

TRUSTEES.

J. W. PARSONS, M. D., Portsmouth, for three years.  
LEVI G. HILL, M. D., Dover, for two years.  
WM. T. SMITH, M. D., Hanover, for one year.

COMMITTEE ON PUBLICATION.

G. P. CONN, M. D., Concord.  
M. H. FELT, M. D., Hillsborough.

DELEGATES TO STATE SOCIETIES.

*Maine*—L. J. FRINK, M. D., Bartlett.  
EZRA MITCHELL, M. D., Lancaster.  
*Vermont*—W. T. SMITH, M. D., Hanover.  
C. A. LAMSON, M. D., Scytheville.  
*Massachusetts*—I. G. ANTHOINE, M. D., Nashua.  
F. E. KITTREDGE, M. D., Nashua.  
*Rhode Island*—A. S. WALLACE, M. D., Nashua.  
JAMES T. GREELEY, M. D., Nashua.  
*Connecticut*—M. W. RUSSELL, M. D., Concord.  
I. J. PROUTY, M. D., Keene.

DELEGATES TO DARTMOUTH MEDICAL COLLEGE.

IRA H. ADAMS, M. D., Derry Depot.  
J. W. PARSONS, M. D., Portsmouth.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION,  
which meets on the first Tuesday in May, 1896, at Atlanta,  
Ga.,—

*Voted*, That the Executive Committee and the Secretary fill  
our delegation from such members as shall signify a desire to  
represent the Society.

COMMITTEE ON THE HISTORY OF MEDICINE IN NEW HAMPSHIRE.

I. A. WATSON, M. D., Concord.  
WILLIAM CHILD, M. D., New Hampton.  
J. W. PARSONS, M. D., Portsmouth.  
WILLIAM T. SMITH, M. D., Hanover.  
G. P. CONN, M. D., Concord.

All communications intended for this committee should be addressed to  
the chairman, Dr. Irving A. Watson.

The next annual meeting of the New Hampshire Medical Society will be  
held in Concord, the first Monday and Tuesday in June, 1896.

All communications intended for the society should be addressed to the  
secretary, G. P. Conn, M. D., Concord, N. H.

# NEW HAMPSHIRE MEDICAL SOCIETY.

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## PROCEEDINGS

OF THE

ONE HUNDRED AND FOURTH ANNIVERSARY.

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MORNING SESSION, MONDAY, JUNE 3, 1895.

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The Fellows of the society assembled in the hall of the G. A. R., in Concord, at 11 o'clock.

The meeting was called to order by the president, Dr. David P. Goodhue, of Springfield, who called upon the chaplain, Rev. Howard F. Hill, of Concord, to open the session with prayer.

### PRAYER.

Our Father who art in heaven, hallowed be Thy name. Thy kingdom come, thy will be done, on earth as it is in heaven. Give us this day our daily bread, and forgive us our debts as we forgive our debtors. Lead us not into temptation and deliver us from evil: For thine is the kingdom and the power and the glory, forever and ever. Amen.

Direct us, O Lord, in all our doings, with Thy most gracious favor, and further us with Thy continual help; that in all our works, begun, continued, and ended in Thee, we may glorify Thy holy name, and finally, by Thy mercy, obtain everlasting life, through Jesus Christ our Lord. Amen.

Dr. Stillings, chairman of the Committee of Arrangements, not being present, Dr. McMurphy of the committee made the announcement that the annual dinner would be served at the New Eagle hotel, on Tuesday at 1 o'clock.

The executive committee, through its chairman, Dr. Charles R. Walker, of Concord, reported that several volunteer papers have been referred to the committee.

That after the council meeting to-night, Prof. J. H. Linsley, of Burlington, Vt., will deliver an illustrated lecture on "Bacteriology."

Also, that Dr. Douglass, of New York, has also kindly consented to give us some points on "Nose Diseases."

The president appointed the following committees:

COMMITTEE ON THE RECEPTION OF DELEGATES.

DR. CHAS. R. WALKER, Concord.

DR. F. A. STILLINGS, Concord.

DR. H. A. WEYMOUTH, Andover.

COMMITTEE TO EXAMINE PATIENTS.

DR. E. F. MCQUESTEN, Nashua.

DR. W. T. SMITH, Hanover.

DR. I. J. PROUTY, Keene.

DR. J. W. RUSSELL, Concord.

DR. D. S. ADAMS, Manchester.

The morning business having been concluded, the reading of medical papers and communications was commenced, the first being a dissertation, "The Germ Considered as a Prime Factor in the Production and Treatment of Disease," by Dr. S. W. Roberts, of Wakefield. Discussion opened by L. G. Hill, M. D., of Dover.

The next paper on the programme was an essay on "Congenital Imbecility," by Edward French, M. D., of Concord, the discussion upon which was opened by Dr. G. P. Conn and continued by other members.

The third paper on the programme, an oration by Dr. S. N.

Welch, was omitted, and Dr. Welch continued for another year.

The society adjourned to 2 p. m. for dinner.

### AFTERNOON SESSION.

The meeting was called to order at 2:15 p. m., and the reading of papers resumed, the first being a report "On Electricity in the Hands of the General Practitioner," by G. H. Saltmarsh, M. D., of Lakeport, discussion being opened by Dr. French, of Concord.

The Committee on Reception of Delegates from other societies introduced to the president, who in turn introduced to the society, Dr. Willard S. Everett, of Hyde Park, Mass., H. H. Lee, M. D., from Vermont, and G. P. Morgan, M. D., from Maine.

#### DR. EVERETT OF HYDE PARK.

*Fellows of the New Hampshire Medical Society:* The Massachusetts Medical Society sends to you its greetings, and is pleased that harmony and prosperity attend you, and that a general interest is being awakened by the great work we are doing for humanity. You will excuse me from any extended address at this time, and we will all continue the work for the good of humanity.

The next paper was a dissertation "On Cancer, with Especial Reference to Recent Studies as to Its Cause and Treatment," by Gilman D. Frost, M. D., of Hanover. Discussion opened by Dr. Douglass, of New York city.

Next on the programme was a report "On Surgery," by J. Franklin Robinson, M. D., of Manchester. Discussion opened by D. S. Adams, M. D., of Manchester.

The next paper was a dissertation "On Diarrhœa," by Benjamin Cheever, M. D., of Portsmouth, the discussion of which was opened by M. C. Lathrop, M. D., of Dover.

Next a paper was read "On Some of the Uses of Strophantus," by W. K. Wadleigh, M. D., of Hopkinton.

All these papers were referred, when Dr. Frank P. Foster, of New York, read an obituary notice of the late Dr. Charles

P. Gage, of Concord, which was an eloquent tribute of a former pupil.

Notice was given that there will be a meeting of the alumni of Dartmouth Medical College immediately after adjournment.

Notice was given of the meeting of the council at 7:30 this p. m.

Voted to adjourn to 8:30 Tuesday morning.

#### MORNING SESSION.

TUESDAY, June 4, 1895.

Called to order at 8:30 a. m., by the vice-president, Dr. E. F. McQuesten, of Nashua, as the president was absent.

The first business being the report of the council, the secretary read the following

#### REPORT :

The council met in G. A. R. hall Monday evening, June 3, 1895, and was called to order at 7 p. m., the president in the chair.

The secretary called the roll of the council, and the following members were found to be present:

DR. D. S. ADAMS, Manchester.  
DR. W. K. WADLEIGH, Hopkinton.  
DR. D. EDWARD SULLIVAN, Concord.  
DR. G. D. FROST, Hanover.  
DR. S. N. WELCH, Sutton.  
DR. J. W. STAPLES, Franklin Falls.  
DR. G. H. SALTMARSH, Lakeport.  
DR. G. S. GOVE, Whitefield.  
DR. EDWARD FRENCH, Concord.  
DR. M. H. FELT, Hillsborough Bridge.  
DR. S. W. DINSMOOR, Keene.

On motion of the secretary, it was voted to fill the places of absent members from members of the society that were present, and the following were elected:

DR. F. E. KITTREDGE, Nashua, to take the place of Dr. C. A. Fairbanks, Dover.

DR. A. N. SMITH, Dover, to take the place of Dr. A. G. Straw, Manchester.

DR. C. R. WALKER, Concord, to take the place of Dr. C. B. Hammond, Nashua.

DR. C. J. ALLEN, Peterborough, to take the place of Dr. H. A. Weymouth, Andover.

DR. I. G. ANTHOINE, Nashua, to take the place of Dr. E. L. Carr, Pittsfield.

DR. J. B. Hyland, Keene, to take of Dr. J. F. Robinson, Manchester.

DR. I. J. PROUTY, Keene, to take the place of Dr. John W. Parsons, Portsmouth.

DR. G. H. SANBORN, Henniker, to take the place of Dr. T. B. Sanborn, Newport.

DR. E. E. GRAVES, Boscawen, to take the place of Dr. D. L. Stokes, Rochester.

The following applications were recommended for membership:

BYRON DOUGLAS PEASE, M. D., Greenville.

ANNA MARIA LITTLEFIELD, M. D., New London.

H. L. STICKNEY, M. D., Newport.

GEORGE S. HAZARD, M. D., Hollis.

E. B. ANDREWS, M. D., Ossipee.

CAROLINE M. RICHARDS, M. D., Manchester.

E. E. DEAN, M. D., Lebanon.

HERBERT C. EMERSON, M. D., Concord.

GEORGE M. WATSON, M. D., Haverhill.

HENRY T. FONTAINE, M. D., Suncook.

WM. HENRY MITCHELL, M. D., Suncook.

FREDERICK S. TOWLE, M. D., Portsmouth.

The petition of Mrs. Marietta Ellis Flanders, M. D., of Hopkinton, was referred to a special committee consisting of Drs. Adams, Hyland, and Walker for further information.

On motion of Dr. C. R. Walker, of Concord, it was

resolved that the council elect, as honorary member of the society, Prof. J. H. Linsley, M. D., of Burlington, Vt.

The application of Dr. Frederick Perkins, of Manchester, for admission to the society, was referred to a special committee consisting of Drs. McQuesten of Nashua, Prouty of Keene, Walker of Concord, Smith of Dover, Allen of Peterborough, for further investigation.

It was voted that the special committee hold their first meeting Tuesday morning at eight o'clock, to organize, and that the parties interested be notified as to when and where formal hearing will take place.

The report of the board of censors was presented through Dr. M. H. Felt, of Hillsborough Bridge, and it was voted that the report be referred to the committee on publication.

The petition of members of the society residing in Belknap county to form a local society to be known by the name of the Winnipesaukee Academy of Medicine, was presented to the council by the secretary, and it was voted that the prayer of the petitioners be granted, and that the secretary issue a charter for a district society.

There being no further business the council adjourned.

The report of the council was accepted and the applicants elected to membership.

The reports of delegates to other societies, and the reports of district societies, as well as the report of delegates to Dartmouth Medical College, were read by their title, and referred to the committee on publication.

The treasurer's and auditors' reports were submitted by the treasurer, and also the report of the trustees, which were as follows:

*To the N. H. Medical Society:*—Your treasurer for the year ending June 3, 1895, presents the following report:

DR.

To balance on hand, June 18, 1894 . . .	\$754.30
“ cash, rent from Dr. A. K. Day . . .	27.75
“ cash, fees and dues to date . . .	548.00
	————— \$1,330.05

## CR.

1894.

June 18.	By Merrimack River Savings Bank book, delivered to Dr. J. W. Parsons, trustee . .	\$521.45
	By New Hampshire Savings Bank book, delivered to Dr. J. W. Parsons, trustee . .	152.94
19.	By cash paid W. T. Smith, M. D. . . . .	5.73
	By cash paid Dr. G. P. Conn, items . . . . .	72.00
	By cash paid Dr. G. P. Conn, salary . . . . .	50.00
	By cash paid Eagle Hotel . .	18.75
	By cash paid McShane & Ginty, livery . . . .	12.00
	By cash paid C. E. Tozier, music . . . . .	19.00
	By cash paid M. H. Felt, salary . . . . .	25.00
July 11.	By cash paid A. J. Shurtleff, reporter . . . . .	15.00

1895.

Jan. 8.	By cash paid H. F. Smart, printing . . . . .	2.00
March 8.	By cash paid Rep. Press Association . . . . .	274.80
April 20.	By cash paid Rep. Press Association . . . . .	6.50
May 14.	By cash paid Rep. Press Association . . . . .	16.25
May 22.	By cash paid Rep. Press Association . . . . .	2.25
June 1.	By cash paid M. H. Felt, items, . . . . .	6.42
		<hr/>
		\$1,200.09
	Balance in treasury . . . . .	129.93
		<hr/>
		\$1,330.05

Respectfully submitted:

M. H. FELT, *Treasurer.*

Hillsborough Bridge, June 3, 1895.

## TRUSTEES' REPORT.

CONCORD, June 4, 1895.

The trustees submit the following report of funds in their hands:

The Bartlett fund, on deposit in the Portsmouth

Savings Bank, amounted at the last report to . . . . .	\$2,225.85
January 1, 1895, interest entered on the bank book	<u>67.27</u>
Total . . . . .	\$2,293.12

Three hundred and fifty-two dollars eleven cents of this amount is by the terms of the bequest a permanent fund, leaving the sum \$1,941.01 to the order of the society.

The Pray fund, on deposit in the Strafford Savings

Bank at Dover, amounted at the last report to . . . . .	\$1,136.65
January 1, 1895, interest entered on bank book . . . . .	<u>34.24</u>
Total . . . . .	\$1,170.89

The original fund was one thousand dollars, the income only of which can be expended for a specific purpose.

The trustees respectfully report that there has been but one essay presented for the Pray prize, and that no award will be made this year.

The trustees, if there is no objection, will omit to issue notice for essays this year.

June 18, 1894, the trustees received of M. H. Felt, treasurer, bank book No. 21457 of the Merrimack River Savings Bank, Manchester, standing in the name of John W. Parsons, treasurer *pro tem.*, showing a balance of \$521.45.

This amount, with interest added, has been transferred to a new book No. 26934, in the name of the New Hampshire Medical Society, and now amounts to \$573.01.

June 18, 1894, the trustees received of M. H. Felt, treasurer, bank book No. 35696 of the New Hampshire Savings Bank, Concord, standing in the name of the treasurer of the New Hampshire Medical Society, showing a balance of \$152.94.

This book has been transferred to the New Hampshire Medical Society, and there is now a balance of \$163.79.

LEVI G. HILL,  
J. W. PARSONS,  
WM. T. SMITH,  
*Trustees.*

The trustees also reported that they had examined the books of the treasurer, and found the same to be correct and vouched for.

Report accepted.

The report on necrology was read by its title and referred to the committee on publication.

At 11 o'clock the election of officers took place according to the By-Laws, with the following result:

PRESIDENT.

E. F. McQUESTEN, M. D., Nashua.

VICE-PRESIDENT.

A. P. RICHARDSON, M. D., Walpole.

TREASURER.

M. H. FELT, M. D., Hillsborough.

SECRETARY.

G. P. CONN, M. D., Concord.

EXECUTIVE COMMITTEE.

CHARLES R. WALKER, M. D., Concord.  
GEORGE D. TOWNE, M. D., Manchester.  
F. A. STILLINGS, M. D., Concord.  
W. T. SMITH, M. D., Hanover.  
F. E. KITTREDGE, M. D., Nashua.

ANNIVERSARY CHAIRMAN.

A. N. SMITH, M. D., Dover.

## COMMITTEE OF ARRANGEMENTS.

D. E. SULLIVAN, M. D., Concord.  
A. K. DAY, M. D., Concord.  
C. W. LOVEJOY, M. D., Concord.  
N. W. McMURPHY, M. D., Concord.  
CHAUNCEY ADAMS, M. D., Concord.

## COUNCIL.

G. D. FROST, M. D., Hanover.  
J. W. STAPLES, M. D., Franklin Falls.  
G. S. GOVE, M. D., Whitefield.  
G. H. SALTMARSH, M. D., Lakeport.  
J. W. PARSONS, M. D., Portsmouth.  
D. L. STOKES, M. D., Rochester.  
C. B. HAMMOND, M. D., Nashua.  
C. A. FAIRBANKS, M. D., Dover.  
C. F. STARR, M. D., Manchester.  
A. K. DAY, M. D., Concord.  
L. J. FRINK, M. D., Bartlett.  
G. W. McGREGOR, M. D., Littleton.  
J. WALLACE-RUSSELL, M. D., Concord.  
ELIZABETH B. REED, M. D., Keene.  
L. B. MORRILL, M. D., Center Harbor.  
J. T. GREELEY, M. D., Nashua.  
G. H. LARRABEE, M. D., Suncook.  
E. W. HODSON, M. D., Centre Sandwich.  
I. G. ANTHOINE, M. D., Nashua.  
W. A. MEGRATH, M. D., Loudon.

## BOARD OF CENSORS.

DANIEL S. ADAMS, M. D., Manchester.  
GEORGE D. TOWNE, M. D., Manchester.  
THOMAS HILAND, M. D., Concord.  
JOHN W. PARSONS, M. D., Portsmouth.  
CHARLES B. HAMMOND, M. D., Nashua.  
CHARLES B. DRAKE, M. D., West Lebanon.

LEONARD JARVIS, M. D., Claremont.  
J. C. EASTMAN, M. D., Hampstead.  
IRA J. PROUTY, M. D., Keene.  
M. C. LATHROP, M. D., Dover.

## OFFICERS OF THE BOARD TO ISSUE LICENSES.

DANIEL S. ADAMS, M. D., Manchester, President.  
THOMAS HILAND, M. D., Secretary, Concord.  
JOHN W. PARSONS, M. D., Associate, Portsmouth.

## TRUSTEE.

JOHN W. PARSONS, M. D., Portsmouth, for three years.

## COMMITTEE ON PUBLICATION.

G. P. CONN, M. D., Concord.  
M. H. FELT, M. D., Hillsborough.

## DELEGATES TO STATE SOCIETIES.

*Maine*—L. J. FRINK, M. D., Bartlett.  
EZRA MITCHELL, M. D., Lancaster.  
*Vermont*—W. T. SMITH, M. D., Hanover.  
C. A. LAMSON, M. D., Scytheville.  
*Massachusetts*—I. G. ANTHOINE, M. D., Nashua.  
F. E. KITTREDGE, M. D., Nashua.  
*Rhode Island*—A. S. WALLACE, M. D., Nashua.  
JAMES GREELEY, M. D., Nashua.  
*Connecticut*—M. W. RUSSELL, M. D., Concord.  
I. J. PROUTY, M. D., Keene.

## DELEGATES TO DARTMOUTH MEDICAL COLLEGE.

IRA H. ADAMS, M. D., Derry Depot.  
J. W. PARSONS, M. D., Portsmouth.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION,  
which meets on the first Tuesday in May next, at Atlanta, Ga.  
*Voted*, That the Executive Committee and the Secretary fill

our delegation from such members as shall signify a desire to represent the Society.

COMMITTEE ON THE HISTORY OF MEDICINE IN NEW HAMPSHIRE.

I. A. WATSON, M. D., Concord.  
WILLIAM CHILD, M. D., New Hampton.  
J. W. PARSONS, M. D., Portsmouth.  
WILLIAM T. SMITH, M. D., Hanover.  
G. P. CONN, M. D., Concord.

NECROLOGIST.

JOHN J. BERRY, M. D., Portsmouth.

PROGRAMME FOR THE NEXT ANNUAL MEETING.

S. N. WELCH, M. D., Sutton.  
C. F. STARR, M. D., Manchester.  
A. K. DAY, M. D., Concord.  
D. E. SULLIVAN, M. D., Concord.  
L. J. FRINK, M. D., Bartlett.  
G. W. McGREGOR, M. D., Littleton.  
G. S. GOVE, M. D., Whitefield.  
J. W. STAPLES, M. D., Franklin Falls.  
A. F. WHEAT, M. D., Manchester.  
I. G. ANTHOINE, M. D., Nashua.  
J. T. GREELEY, M. D., Nashua.  
E. P. HODSON, M. D., Lakeport.  
W. A. MEGRATH, M. D., Loudon.

The remainder of the programme was again taken up as follows:

1. Report of delegates to Dartmouth Medical College.
2. Reports of delegates to other societies.
3. Reports of District Societies.
4. Volunteer papers or other business.
  - a. Dissertation. "On Bacteriological Diagnosis of Diphtheria." By Herbert C. Emerson, M. D., Concord.

- b. Report. "Serum Treatment of Diphtheria." By C. P. Frost, M. D. Discussion opened by D. Edward Sullivan, M. D., Concord.
- c. Report. "On Modern Methods of Treating Diseases of the Nose and Throat." By O. B. Douglass, M. D., New York. Discussion opened by Thomas Hiland, M. D., Concord.
- d. Dissertation. "On the Physical Basis of Crime." By John J. Berry, M. D., Portsmouth. Discussion opened by C. P. Bancroft, M. D., Concord.
- e. Essay. "Conservatism in Medicine and Surgery." By G. P. Conn, M. D., Concord. Discussion opened by Chas. R. Walker, M. D., Concord.

5. President's Address. David P. Goodhue, M. D.
6. Introduction of Officers.
7. Anniversary dinner and post-prandial exercises.
8. Adjournment.

The anniversary dinner was served at the New Eagle hotel, Robert Burns, M. D., anniversary chairman, presiding and introducing the *post-prandial* exercises, as follows:

ROBERT BURNS, M. D., PLYMOUTH, CHAIRMAN.

The position to which the kindness and courtesy of your executive committee has assigned me is a source of great satisfaction, as, indeed, I think any office of this society is an honor to its recipient. It is a pleasure to me to come here to-day, both for the mental pabulum which the papers and discussions so abundantly afford, and also for the social enjoyment and good fellowship which is so luxuriously free from the taint of professional responsibility with which so many of the social functions at our homes are contaminated. To be sure, the office of anniversary chairman is rather a sinecure,—a good position for a lazy man, for the real burden is assumed by the after-dinner speakers,—and in a moment's parenthesis let me suggest that at some time in the near future this society take into consideration the action of the Massachusetts Medical Society, which seems to me exceedingly becoming and appropriate, making the president *ex-officio* the presiding officer of the anniversary dinner. Again thanking you for the honor

you have conferred upon me, I will not try your patience by detaining you longer.

I have great pleasure in proposing to you "The Old Granite State," and had hoped to have introduced to you Governor Busiel in answer to this sentiment. In his unavoidable absence, allow me to present to you General Streeter of the governor's staff.

REMARKS BY MR. STREETER.

*Mr. Chairman and Gentlemen:* In behalf of his excellency I give you a most cordial and hearty welcome to the city of Concord, the capital of the state, and am directed by Governor Busiel to express to you his profound regret at his inability to be with you on this interesting occasion. I have now performed my duties. I asked my associate on the governor's staff, General Carbee, what was expected of me after I had said what I have already given, and he said, as the trains were to leave within about half an hour, I should be expected to sit down. But before going I want to suggest a fact. I am led to believe that the gentlemen connected with this association, whatever their other merits, or their vices may be (I hope they have n't any), but I am led to believe that of all men in the state of New Hampshire the members of this profession and of this society are truthful men. There is an understanding that the men of this profession have an innate philosophy which prevents them from telling an untruth on any occasion. This was illustrated very well the other day by a friend of mine, a lawyer, who went over to Loudon fishing with one of your gentlemen who is here present at this time. They hitched their horse at a bridge over the stream, and both started down stream, and they fished an hour or two and didn't get a bite. They came back and made up their minds to go home, and finally the lawyer said, "Well, Doctor, if you will wait a few minutes, I will try fishing up stream and see how it goes." The doctor said, "All right, and while you are gone I will just drop a line in here; perhaps I can get something on the bridge." The lawyer went up stream, was gone about half an hour, but didn't get a bite. He came back. The doctor held up a string of eight or nine trout which he

had caught from that bridge. Now, gentlemen, he said he caught them there, and he was an honest man. No lawyer would ever have dared to make the statement that he caught those fish from the bridge. It was only a sense of honesty on the part of the medical gentleman that made him feel that that thing would go, and it did go, gentlemen.

After what the chairman has suggested, and his quiet intimation to me a few moments ago that he would like to have me cut this thing short, I desire only to express my personal gratification at being able to be present with a body of men whose functions in the state I regard as more important than those of any other of the learned professions. We gentlemen of the law are either trying to help our clients keep some money that the other fellow wants, or we are trying to help our clients get some money out of the other fellow that he wants to keep. My friend here, the chaplain, is engaged in a calling which deals largely in futures. He does n't know how his cases are coming out at present. But you, gentlemen, deal with more important and present questions. You are vested with the most sacred trusts that can be given to any body of our citizens, and the society is to be congratulated that such trusts are never betrayed. Again thanking you, gentlemen, I will close.

Allow me to propose "Our Annual Meetings," and to request your attention for Dr. McQuesten, of Nashua, our new president, who can always be depended upon as a standard-bearer on these occasions.

DR. MCQUESTEN OF NASHUA.

*Mr. Toastmaster, Ladies and Gentlemen:*—I regret very much that our retiring president, Dr. Goodhue, was obliged to leave before the banquet, that he is not here to respond for the society, but I am very proud to be in a position to respond for this grand old society, and never more so than after the events of this morning, for you have held high the standard of modern medicine and surgery, never higher; and we all believe with Professor Frost, that any man who has had during the last decade his eyes closed to the advances of medicine and

surgery, is moribund. Why, my dear friends, it goes without saying that our annual meetings are always a source of profit and of pleasure, that we go home from them in better condition and better prepared for our work, and that we come here as a rule, I believe, always for the purpose of brushing up in many of the details, and without these meetings we should get rusty on more points than we now do. With them good cheer and fellowship prevail, and without them professional etiquette, always somewhat at a discount, would be infinitely more so. The attendance at our meetings is usually good. It is this year, but there is a large contingent of practitioners in the state, some of the busiest and therefore the most useful, and many of them members, who are conspicuous by their absence. Not only do they fail to put in even an occasional appearance here, but they have practically no interest in our behalf, and it seems strange that so many physicians should be indifferent to this time-honored society, the object of which is to promote the usefulness of the entire profession, and its honor and dignity throughout the state. Now I believe, gentlemen, that this matter we should look to seriously, and if it is possible, devise some means to bring in these absent men, that we should warm up to them, or warm them up, so that the interest here would not be in spots or patches as at present, but would be uniform through every county in the state. It cannot be denied, I think, that we are in good working order, that our papers are up to the average standard, that our officers are alive to the proper ways of conducting its affairs, but meritorious papers or wide-awake officers can accomplish but little with a meagre attendance of members. I am not speaking particularly of this assemblage here to-day. It argues well for the future. We never have had a better meeting, and I think you will agree with me that it pays to come here in this way and compare notes. It does not matter much what organization we belong to so far as the life goes, whether political or social or religious or literary, the inspiration of them all is an active membership. I have said that our papers are up to the average standard. Nevertheless, I have a little criticism to-night which does not apply to this meeting, except on one or two occasions. There have been one or two

instances at this meeting when the audience during the reading of our essays has been small and irregular, and this is unfortunate, for every man is entitled to our attention, and possibly the publishing of our transactions may have something to do with this. You know we live in a time of an abundance of journals, of periodicals, weeklies, monthlies, annuals, and semi-annuals, and there is much in them that is not inviting ; and it is refreshing, providing we have not become too familiar with them, to take up our own transactions ; and so this may be an excuse for the non-attendance that we can take up our transactions and see what has been going on in the meetings ; but there is more life in the meeting than in the transactions, and I believe our meetings would be more valuable if the attendance was greater and more regular. But there is no lacking of attendance here at the banquet. We are all here on time, and remain until the last course is served, and this would seem to indicate that the social feature is dominant in the minds of the majority, and the majority should be respected. If that is true I, in common with a good many, believe that the time has come when some changes should be made in our meetings, and one that I would suggest would be a change in the place of meeting. Perhaps this would lead up to less formal meetings, but we have gotten into the habit of coming here to Concord a good many of us, and always enjoy it, but there are so many other places in the state that have just as good accommodations, and by going to them we certainly in a measure could fraternize a good many of these men who never come here. It would only require a few years, and in doing this we could also increase the social feature of our gatherings. I only throw this out as a hint to the executive committee. Of course our officers and our committees have been chosen for the ensuing year, and no change could be made, but two or three years hence perhaps, it may be well for the meeting to be held at some other point for it is just possible that there are a good many who are weary of coming to Concord, not because it is Concord, but because we see the same faces, same features in the meetings year after year. I am aware it will be said that we tried this experiment of going about the state some fifteen or twenty years ago, and it failed ; but in

those days we had semi-annual meetings, and in my mind there is no need of doubling the number of meetings in renewing the experiment. Take a retrospective glance over any department of our calling since that time and note the important changes that have occurred in practice and in habits of recreation, and I say that it is not significant because we failed in this some years ago that we must of necessity fail now. There is throughout this state, I am glad to say, more interest shown every year in the local societies, and I think these local societies would be glad any time to entertain the parent society. I will guarantee that Dr. Wallace, president of the Nashua society, whom I see present, will give you ample accommodations if you will go down there, and I presume the Manchester physicians would promise as much, and so would the profession in the other cities and large towns. There are upon the shores of Lake Winnipesaukee a number of places with suitable accommodations; places that should be observed by the physicians and would be if an opportunity of this character was given them.

There are many advantages to be derived from these meetings aside from the educational ones and it is not at all likely that the literary features would be seriously interfered with by a change in the place of meeting; possibly the product of papers would be lessened and with advantage, for they would be given much larger audiences and provoke more animated discussions. There are many men in the medical profession that get into ruts; in fact I think we all get into them more or less, and the longer we practise the deeper the rut. The New Hampshire Medical Society has got into one that leads to this city, but with little labor of the right sort it can be lifted out into a different atmosphere—one that in time will awaken new life to the profession throughout the state.

“The medical profession, as it might be, is the finest in the world, presenting the most perfect interchange between science and art, calling for the highest intellectual strain, and yet keeping one in good warm contact with his neighbors.”

The Medical Press keeps us in touch with all the world. I take great pleasure in introducing to you Dr. Frank P. Foster, editor of the *New York Medical Journal*.

## DR. FRANK P. FOSTER.

*Mr. Chairman, Ladies and Gentlemen:* It seems to me that the most important thing that I could say to you about the medical press has already been said by Dr. McQuesten in the remark that there were altogether too many medical journals—that there was too much of the medical press; so I trust you will bear with me if I avail myself of the privilege usually accorded to him who responds to a toast—the privilege of diverging from his text.

I can tell you very little about medical journalism that you do not know already, therefore I will leave that subject, and say to you how impressed I have been with this meeting, as compared with the few other meetings of the New Hampshire Medical Society that it has been my privilege to be present at. There are not more than two or three of them, and they all occurred more than thirty years ago.

The medical profession in the state of New Hampshire, as everywhere else no doubt, has been almost renewed during that period. I have seen at this meeting only two faces that I saw in those days. Then the society contained many men of impressive appearance, men of intellectual and moral strength. To-day men of that type preponderate, and the women—God bless them!—have crept in. I think that the New Hampshire Medical Society has made a distinct advance.

I have not been able to attend a great portion of your scientific sessions, but during a portion of yesterday's afternoon session I was very much interested indeed in the papers that were read and the discussions that were held, and I am sure that, whether or not you adopt Dr. McQuesten's peripatetic scheme, you will go on flourishing and prospering. I certainly wish you that from the bottom of my heart.

Permit me to quote again from the great dissector of character of our century, who voices my thought in saying, "A model clergyman, like a model doctor, ought to think his own profession the finest in the world, and take all knowledge as mere nourishment to his moral pathology and therapeutics." Allow me to present to you our chaplain, the Rev. Howard F. Hill.

REV. HOWARD F. HILL.

*Mr. Chairman, Ladies and Gentlemen:* Since I was reared as it were among physicians, since my closest friends after entering my own profession have been of that calling, my associations have been, not only by reason of necessity, but very largely of choice, among the medical fraternity. I remember the days when as a senior I attended medical lectures. I recall the sepulchral solemnity of Dr. How, and some of the strong anecdotes with which he supplemented his scientific information. In later years, I served as a trustee of the University of Vermont, enlarging my medical knowledge and acquaintance. As long a school superintendent in Montpelier, I had to revive my knowledge of physiological facts, in order to become a terror to school teachers.

It seems to me that while the profession to which I belong is said to deal largely in "the future,"<sup>1</sup> that if its members follow the example of the Master on whose name they call, they have much to do with the things which now are. I have always felt that if I desired the confidence or good will of an individual, if I could gain his love, I had captured the man entire. The result has been that in my ministrations, I have been, very largely, a physician without a diploma, myself attending to people's bodies. He whom we love, when He raised the pale maiden from her slumbers, commanded that food be given her. He did not disdain to speak a word of consolation before He spoke the mighty word which raised the boy from his bier at the gates of Nain, nor to dissolve in tears before Lazarus's raising.

When I have desired to do my best professional work, I have not announced my purpose, but have kept company for a long time with a person and said very little about religion. By and by he began to say something, wondering why I did n't. Then when I had made him begin thinking for himself, and especially to think that he had started the whole subject, it was my opportunity, and the man was mine.

I have always held that since this is the best world we have lived in, the best world we know particularly about, and since

<sup>1</sup> In reply to Mr. Streeter.

it is the world in which we are to stay, that while we do stay it is worth our while to attend to the present, as the best way to regard the future. If existence needs any justification, it is to be found in service. It has been my lot to be called out by physicians (like them also) to calm a hysterick and to get a child away to be dressed for burial ; to be a nurse myself; to make those around the bedside of one about to depart think they were useful, or to really be so ; to perform the office of an undertaker, and in my way to render all sorts of physical ministrations. So I do feel that I have been helpful to the human species. The man who has a drop of warm, red blood in him will leave the future, in a measure, to take care of itself, and attend to the present, because the present is here and the future is not. Let each attend to our respective duties, trying to be well and trying to be happy. If there is any legitimate joy, or any honorable pleasure, I want my share, and hope you will get your portion. And one part of this is good service to our fellows.

Of course, at the proper time, I made the commendatory prayer for the soul passing to its Maker. The result has been, that what I gave in a distinctively religious way always proved acceptable and serviceable. You know that oftentimes heroic doses of religion have been given, and large portions found rejection. A small modicum of medicine, a small allowance of nourishment which will be retained, is more profitable than a generous portion which is cast up entire. Just so in religion. I have been able to infuse strength, courage, and vital force into people with whom I have come in contact. They never dreaded to see me coming. I have always been ready to serve any of God's creatures, regardless of race or religious views. It mattered not to me whether they thought they had souls. And sometimes they were so unresponsive that I almost doubted whether they actually had such possessions. I do know for certain that I have cheered and uplifted men and been a helper to the widow. I know there are those in the world who have acknowledged fathers, who have husbands, whose good names were saved, because I had practical sympathy and love, and forgot not bodily service, heeding the present, while not regardless of "the future." And though my

sins may be as scarlet, I hope that in the record of the Most High there may be some favorable note of my own future, for reasons of my attempted service to Him in the manner indicated. In regard to offences, I trust that there will be allowance made for the things I have had a chance to do, but declined to do them. It was not my purpose to speak in this vein, and I have only done so on provocation.

It has been my lot to have some very lively discussions with physicians about things present as well as future. I remember one with an eminent professor, which lasted, with the aid of refreshments, till an unseemly hour. The debate culminated in this point—Can there be existence without matter? I think we understood and respected each other better by reason of it.

I especially desire to say to you, brothers of the medical profession—brothers in a common service—that if you can find some live, wholesome pastor, you will find a friend indeed. If it is wise to call in some one to make a prayer, be sure to do it. Be able to pray yourselves. I own to having been surprised at the great help of religious ministrations. You know the effect of mind on mind. You know how fears and delusions in weakness are dispelled by a man in whom the sick have confidence; above all by a man they love. How they can be heartened! If baptism or Holy Communion is desired, do n't fail to call in a trusty, trusted man. It will not hurt your aim. It will strengthen the invalid, if he must go over to the other side of being. If the sick are to be translated from the burden of the flesh, they will go confidently and happily. For your patient's sake and your own, call in some pastor, I do not care of what affiliation, Roman Catholic or Jewish Rabbi. Be sure to have someone summoned. There are loving, helpful, sensible men in all connections. The Roman Catholic clergy are true and noble workers, so far as I have known them. I say this as a Protestant, so called. If an invalid wishes to make confession, help him to do it. Confessions are made to you in a professional way every day. It is the same with the lawyer. Under different names it is the same principle in various ways. If a patient has anything on his conscience, let him get it off—just as if there were a load upon his stomach—that he may feel better.

The division of the professions is for purposes of description. We are all servants. "We are all one man's sons." We are all brethren and kin. We all bow to one supreme grand Master.

I take pleasure in introducing to you Dr. O. B. Douglass, also of New York, whom I hope will give us all-around men a word in regard to Specialism in Medicine.

DR. O. B. DOUGLASS.

*Mr. Chairman, Ladies and Gentlemen:* To be able to speak well is a great accomplishment, to listen well is a greater accomplishment. I crave the greater accomplishment. In other words we have crystallized the same idea: that "speech is silver, silence golden." I am not much of a politician, but I am not a bimetallist. I believe in gold. So I will not detain you very long.

In reference to specialism and general practice, I want it here recorded that I have a profound respect for the all-round general practitioner. I do not know a broader, grander man than he who, out on the hills and plains, is ready to go to any call and perform any operation required. I believe like the all-round athlete such a man is capable of doing great good. In towns we fall into a specialty almost from necessity, but are consequently eccentric, one-sided, instead of being well-balanced. If there be any excuse for being a specialist, it would be about this, that having done work that seemed successful, the patient tells his friends that such a doctor had helped him. So-and-so recommends him to go and see the doctor that cured him. Like fire, it spreads easily, and his reputation is soon established as a specialist.

We do get credit for a great deal we are never entitled to, but the confidence of our patients is valuable, for it is by this means that others are induced to come and crave our service. In a little while we find ourselves in a narrow way, sometimes narrowing more and more. I want the general practitioner to feel that he is ahead; and the specialists—who have to be specialists—are the ones to be pitied. In reference to the

specialty which I am here to partly represent, I quote,—(it was not written by one of my patients, I almost wish it had been),—

“I know his nose. He knows I know his nose.  
He said he knew I knew his nose.  
And, as he said he knew I knew his nose,  
Of course I know he knows I know his nose.”

## THE PRESIDENT'S ADDRESS.

BY DAVID P. GOODHUE, M. D., SPRINGFIELD.

Another year is numbered with the past, and we are sadly reminded of the uncertainty of life by the thoughts that some of our number who met with us here last year have gone over the river to return here no more. The young and the aged have been taken, but we still are spared. Let us hope it is for some good purpose, and let us attend to our duties faithfully while we can, so that this world may be better by our having lived in it. Let us not stand still, but keep improving. New theories are being constantly brought forward, and they should be examined thoroughly and judiciously, and after a fair trial be accepted or rejected. They should not be accepted because they look well or coincide with ideas we had previously formed, nor because they were promulgated by our friends; but they should be tested on their own merits, and stand or fall as the case may be.

It is said that new times demand new measures and new men. This may be true, but new times, if they demand new measures, demand true measures, and that new men be true men.

I do not expect in this address to tell you anything but what you already know, but if what I say will be of any benefit to any of my brother physicians who live in the back country towns, as I live there, I shall be satisfied.

From the earliest times up to the present the physician has been blessed and cursed. In Old Testament times we find that the sick were told what to do for certain ills, and how they had to obey explicitly the orders given them. Naaman the Syrian, the mighty general of his times, would not have been cleansed of his leprosy if he had not obeyed and washed in

the Jordan. Now a good many of our patients are like this same Naaman: they want some mighty work done for them or they think it will be of no use to try and cure them. They forget the cleansing effect of good air and pure water.

In later ages we read of Luke, the beloved physician, and we also read of the woman with the issue of blood, who had suffered many things from many physicians and had spent all her living on them, and instead of getting better rather grew worse. She would have been a good subject for some of us country doctors to have sent to a city hospital for further treatment, or for some of our city physicians to have sent up into the country, where she could have got good fresh air and escaped from further treatment. We also read of the man who was healed and told to tell no man of it, but who was so pleased about his cure that he could not keep quiet, but blazed abroad the matter, as occasionally one will do to-day; but more are like the ten who were cleansed, but only one returned to thank the Physician for his cure. No wonder the Great Physician asked, "Were there not ten cleansed, but where are the nine?"

It is a fact well known to all of us who live in the country that the population in the country towns is gradually decreasing and the valuation growing less. Where, in years gone by, there was population enough to support one physician on account of the ordinary sickness that would occur, we now find abandoned farmhouses, not from the decrease of the children of the former occupants, but from their having gone away to the cities or large villages to engage in what they suppose will be more lucrative occupations. The old people have gone the way of their fathers, and the farms are left without any one to take care of them. In a few years the houses become uninhabitable, the fences fall down, and in many places the farms are sold for taxes.

Many of those who do stay on the farms barely make a living, and when sickness comes they are easily discouraged and are in no condition to pay for medical attendance if it is of long duration. After a time other expenses arise, and as the physician's bill is the last one to be paid, it frequently goes on

until it is outlawed or settled by death, as many physicians' bills are settled.

Before this depopulation of the farms began the country physician, by his profession, if he was industrious and prudent, could save money enough to care for himself and his family in his declining years, and to send his children from home to attend institutions of learning where they could receive a more liberal education than in the towns where they resided. Now it is different. In the common country towns the physician who attends strictly to professional business, unless he is a man of iron physically, and one who is able to work eighteen hours out of the twenty-four, in rain and snow, will find it very hard to bear the expenses of a family and provide for them properly, and give, as he is expected to give, for all benevolent, society, and religious objects.

Why should the physician be called on for every object and expected to give more in proportion to his means than other people are expected to give? Why should he be expected to contribute liberally for the support of some pastor to whose teachings he does not subscribe, and then be expected to attend that pastor and his family professionally without receiving any pecuniary compensation for it?

The days are fast passing when reverend, elder, minister, evangelist, salvationist, etc., carry the weight with them that reverend did in years gone by. Neither do professor, doctor, clairvoyant, faith cure, and mind cure carry the weight that physician did in those days. Many of these titles are like those in old militia time, when every other man was a captain or colonel. As titles abnormally increase, so respect for them proportionately decreases.

The truly reverend man, who has shown by his life-work that he is a godly man, will justly be revered, and so also will the true physician be respected and trusted. Each in his proper place his time fulfills.

Some people think that the physician is obliged to attend every call he has, whether he receives his pay or not. They think the public owns the physician, but they do not think the public must pay him for his services. I have been told this

sometimes, and I have asked those people if I could compel them to come and work for me a day without my paying them for it. They are apt to see it in another light then.

Every physician who has been in practice five years well knows that he has had calls to attend the sick, when he could not go just at the time they sent for him, and how when he did arrive at the patient's house the family appeared indignant to think he had not come before, and some one would say, "If we had been rich I suppose you would have come right off."

In many of these cases, at that very time they were owing the physician for his attendance before that time, and although they had been asked repeatedly to pay for his services, they had always refused, or in other words, they "did not have the money just now," or, "I am a little short just at this time, but will try and get you something soon." The fact is you always hear the same old tune, sung in as many different keys as there are letters in the alphabet, but they all end the same way and you do n't get your pay.

For our own protection and the protection of our families the people should be taught that we, as a profession, are not obliged legally to respond to professional calls when we have not been paid for our services before this time and they will not make us sure of our pay for attendance now. They must be taught that we expended time and money to prepare ourselves for the practice of our profession, and it is our right to demand that we be remunerated for our services the same as other professions are remunerated. They must be taught that it is as dishonorable to cheat the doctor out of his pay, as it is to cheat other people out of their just dues.

The public should be taught that the physician should be paid for his services by the town or city in cases where the patient cannot pay his own bills for medical attendance. The word pauper grates harshly on the ears of most people, and it would be well if it could be eliminated from town reports in some cases, for if it were some deserving people would be more willing to receive aid from the public. I well recall the remark of a lady, who, as the saying is, had seen better days, when she had been reading in a town report that one of her neighbors, a truly pious man, had been classed with paupers,

because the medical attendant had been paid by the town for his attendance during his last sickness. Said the lady, "Only think of it! This man had paid taxes here for more than twenty-five years, and had never been helped before by the town; he was as good as any of us, and still he is classed as a pauper! Why could it not have been put down as for medical attendance during his last sickness, and nothing said about his being a pauper? If I was to die to-day," she continued, "I suppose I should be called a pauper, as I have not money enough to bury me with, after paying my debts."

This is the feeling of the better class of people in regard to this matter, and many really deserving persons suffer from it, as they will not ask for the assistance they need.

Some people think that the expenses of the last sickness must be paid by the town if the deceased person does not leave enough property to pay the expenses, but that is not so. We cannot collect such a bill from the town any more than we can any other, only it does come in as one of the preferred claims of expenses of the last sickness, after the expenses of administration, the widow's allowance, if any, and the funeral charges have been paid.

One growing evil that we have to contend with is that some families are like Methodist ministers in this respect (I do not say this to bring discredit on the ministry), they do not stay long in one place; and in another respect they are unlike Methodist ministers, for if you do not like them, and you will not, you cannot get rid of them so easily.

These families are very apt to call the physician quite often until he wants his pay for attendance, and then after putting him off as long as they can they will employ some one who lives in an adjoining town. It may be they will pay him for a visit or two and then they will promise well. They will denounce their former attendant and declare he does not know anything; and they will tell the one who is attending them now that they are so glad they made a change and although it is costing them more than before still they are willing to pay this increased expense for one who understands the case so thoroughly.

They thus try to tickle his fancy, and I am sorry to say,

they sometimes succeed wonderfully well. They thus go the rounds of the physicians in their locality, and they will sometimes have the contemptible audacity to go and ask the physician first employed to attend them again. I suppose every physician responds to such calls even if in so doing he puts in practice the command, "If thine enemy hunger feed him, for in so doing thou shalt heap coals of fire on his head."

I am well aware that we are all imposed upon at times by people who say that they are poor and need our services but have not the means to pay us. If a person says that and appears to be honest I presume the most of us give them our services for a time and then if we find out that we have been deceived I presume the most of us will treat the next case that comes to us just the same, so as to not let any one really deserving be neglected by the wrong doing of others.

If there is a physician who can preserve his equanimity of mind under all the perplexities and trials to which he is subjected he must be truly a man after God's own heart.

We must not try to cover too much territory in our practice in the country for if we do we shall find that we are wasting our strength and not giving our patients the time nor attention they should receive. Stop long enough with your patients to examine them thoroughly, so you can have a reason for your diagnosis. For the benefit of your patients and yourself do not be too positive in a doubtful case in your diagnosis the first time you see a patient. The disease may not be fully developed, and if you state what the disease is to-day you may have to retract the statement tomorrow. We should always remember this in eruptive diseases where fatal results have frequently followed mistakes in diagnoses. We should protect our patients by keeping the secrets they are sometimes obliged to tell us and which they would not tell any other person. Remember that always. Do not talk too much to the neighbors about the ills of your patients, for what you say will be repeated with additions, and such additions as you will not want to hear as coming from you.

If we expect the people to employ us, and I may say pay us, what shall we do to protect the people? In the first place we should be willing to do our part as good citizens in all the

relations that the word implies. We should attend to all professional calls as promptly as possible. Especially should the younger physicians remember this, that when he receives a call the patient expects him to come as soon as he can. It will soon be known whether he is prompt or tardy. We should attend the rich and deserving poor alike, and if we have a visit to give to anyone without charge, give it to the poor man every time. If a man is poor but honest and trying to make a living, deal with him as leniently as you can. We should protect our patients by giving them intelligent treatment. If we in the country are not so expert as our brothers in the city, still the law holds that we give our patients the benefit of an intelligent diagnosis and treatment. The public surely have a right to ask this.

We should try and protect the people against the class of irresponsible and itinerant doctors, so called, who are travelling about the country. This is a very hard thing to do, as it is a fact generally acknowledged, that many people will take up every new theory that is brought out and every new medicine that comes to hand.

If good judicious laws could be enacted in this respect, it would be a good thing for the people, and save them money that they need for other purposes. I have no doubt but that we sometimes make more money by having these so-called doctors come into the state, as they leave a train of ills behind them that we are called to treat. It is not for our protection that we ask for such laws, but for the protection of the people ; and we should try and make our legislators see this, so that they will be as ready to protect the children and people of our state as they are the fish that swim in its waters.

We as physicians are expected to protect the public, or see that the public is protected, against contagious and infectious diseases. Our legislators enact laws subjecting us to severe penalties if we fail to report such cases to the boards of health, but do they pass laws whereby we shall receive our pay in such cases?

Public opinion should be enlightened, and we as physicians should see that it is done, so that in all cases where we are obliged by law to report diseases to the board of health we

should be sure of getting our pay for attendance in such cases. If the public is willing to pay for being protected against the small-pox, why should not the public pay for being protected against diphtheria and scarlet-fever, from which diseases many more people die than from small-pox?

Those of us who live in the back country towns—and more physicians who live there should be here in this society—know that we lack for good nurses, and therefore we must be very careful to give our directions so they will be understood, or we may find our best treatment has no good effect. You will have to be explicit about the diet, as well as about the medicine.

If your patients or their friends want to know everything the patient is taking, for your own good do n't tell them. If they have not confidence enough in your judgment to take what you give them, let them employ someone else.

Always be ready and willing in a difficult case to have some physician meet you in consultation, and also in cases where the friends of the patient are over anxious. In fact never refuse to have a consultation with any honorable physician, whether you consider it necessary or not. It is a right our patients have and we should not try to abridge it, notwithstanding Garth's epigram,—

“ Like a port sculler one physician plies,  
And all his art and all his skill he tries ;  
But two physicians like a pair of oars,  
Conduct you faster to the Stygian shores.”

We should always treat our patients respectfully no matter what their condition in life may be, for by doing this we shall retain our own self-respect and have the respect of our patients. We must not forget that we have a duty to perform and owe our own families as well as the communities in which we live. This duty is to care for our families by collecting in due season our bills for attending our patients. This is really a serious matter to us who live out in the back towns and I presume has troubled many of us as it did our brothers years ago. There is much truth in the epigram written more than three hundred and fifty years ago, which reads,—

"Three faces wears the doctor ; when first sought,  
An angel's—and a God's the cure half wrought.  
But when the cure complete he seeks his fee,  
The devil looks less terrible than he."

Do not think from this that I would oppress the poor, but from those who can pay I would be sure and get my pay, for it is your just due. From the honest poor, God's poor, turn not away under any circumstances, remembering that if you are not rewarded here you may be hereafter.

# THE PHYSICAL BASIS OF CRIME.

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Criminal anthropology, a science which is so intimately associated with our professional work, forms a most interesting factor in the etiology, prognosis, and treatment of mental disease. It brings to medico-legal investigation a wealth of fact and phenomena which it never before possessed, and it offers to the student of humanity problems which he fain would solve as well as theories which are startling in their suggestiveness.

The careful and extended investigations of the past few years have placed the study of this science upon a new basis. The old beliefs have given place to the new, and the added experience of time enables us to interpret more intelligently than heretofore the natural history of crime and criminals.

Under the old dispensation crime bore no relation whatever to physical conformation. It was solely the expression of a moral defect for which the offender was held personally responsible. To-day, it is more generally considered to be often the outcome of morbid impulses which cannot be controlled—which indeed are a part of the sinner's anatomical make-up, and which may or may not have been developed and intensified by his training and environment. “No one,” said Plato, “is voluntarily bad, but he who is depraved becomes so through a bad habit of body and an ill-governed education.”

That environment alone is not the determining condition of crime has been proven by many observers, but notably by Ferri, who found that out of one hundred persons in the same surroundings of misery and neglect sixty committed no crimes; of the remaining forty, five become insane, five commit suicide, five become beggars, while only the remaining twenty-five are guilty of sinful acts.

The functions of an organ are determined by its conformation. Equally true is it, that variations in its structure produce change or impairment in its physiological action. Consequently in the diseased or anomalous brain we expect to find at least the conditions, if not the direct incentive, of perverted thought and action. Thus, if it can be shown that the criminal possesses to a remarkable degree, co-existing imperfections of the body and brain, and also, that such anatomical defects are hereditary in character, we shall have materially strengthened the position taken by modern investigators in this department of research.

It has long been an accepted fact, that the moral offender has certain well-marked facial defects of a congenital character. In many instances, the countenance is an open index of mental deteriorations. Something is there which instantly arouses aversion and repugnance. Men avoid and distrust him, and children instinctively shrink from his touch.

The inferior maxilla is massive and prominent, its weight being considerably above the average, though in certain types it is small and receding. The cheek bones are high and the diameter of the face between the two zygomatic processes is much increased.

While the existence of dental imperfections and small teeth in idiots has been commented upon, very little is known of the anomalies of criminals, except that there is sometimes an increased, and at times a defective, development of the canines, and in prostitutes, according to Tarnowsky, undeveloped teeth and defects in the hard palate. The ears are large and outstanding, being subject to marked deformities as regards both shape and position. Frigerio<sup>1</sup> calls special attention to a projection on the outer border of the ear, variations in the anti-helix and conical tragus. There is often malformation of the pinna together with the power of movement—conditions which prevail in both the insane and criminals. The nose is large, rectilinear in shape, with a horizontal base, and often deviating to one side. The skin is sallow or pallid, and the face prematurely wrinkled. Several observers have noted the predilection

<sup>1</sup>Frigerio. "L'Oreille external: Etude d'Anthropologie Criminelle." Paris, 1888.

of this class for tattooing various portions of the body. The beard is scanty, while the hair is, as a rule, abundant. The eyes are small and mobile, and have what Lombroso<sup>1</sup> terms a feline expression. Visual defects are common, and though sometimes acquired, are generally congenital. Of 82 criminals examined by Ellis,<sup>2</sup> 67 per cent. were found to have optical lesions, and out of 40 of the instinctive variety, 72 per cent. were thus affected. An examination of 101 children in a reformatory institution, by Van Fleet, disclosed the fact that 67 per cent. had defective vision.

The thoracic organs partake of like anomalies. Deformities of the ribs and sternum with faulty development of the chest and various forms of heart disease are stated by Wey,<sup>3</sup> of the Elmira reformatory, to be very common in the class under his observation. Arterial anomalies are also prevalent. In 81 normal persons, Marro<sup>4</sup> found 70 to be right-handed, 7 left-handed, and 4 ambidextrous. In criminals, however, the proportion of the left-handed and ambidextrous was much larger. In 40 assassins it was 17 per cent.; in 17 incendiaries, 28 per cent.; and in 44 burglars, 18 per cent.

General sensibility was found to be diminished in 38 out of 66 cases, and was most marked, according to Lombroso, in murderers and incendiaries, while Ramlot<sup>5</sup> from a still wider observation, concludes that in these the appreciation of pain was very much less than in the normal individual. Defective hearing may also be numbered among the sensory defects. One investigator found that out of 82 subjects, 67 per cent. were thus affected, while in 69 others reported by Gradenigo, the ratio was 66 per cent. The sense of smell was quite generally impaired, while that of taste was found by Ottolenghi to be present in only 38 per cent. of the habitual criminals.

This impairment in the special senses should be carefully noted and appreciated as indicating degeneration of important brain centres.

<sup>1</sup>Lombroso. "L'Uomo Delinquente." 1889.

<sup>2</sup>Ellis. "The Criminal." 1890.

<sup>3</sup>Wey. "Physical and Industrial Training of Criminals." 1888.

<sup>4</sup>Marro. "I Carattiri dei Delinquenti." 1887.

<sup>5</sup>"Archivio di Psichiatria." 1889.

It is, however, in the skull and brain that we naturally find the most marked and suggestive variations. While the skulls of criminals exhibit no decided peculiarities so far as size is concerned, it may be stated that there is a notable deficiency in medium-sized heads. The skull often assumes a high pointed condition of parietal and occipital bones, giving rise to the "sugar loaf" appearance. In other instances, there is a low, flattened conformation with receding forehead, both of which conditions being generally indicative of cerebral deficiency. Wilson, from measurements of the heads of 464 criminals, finds that the anterior portions are poorly developed, and that the cranial deficiency is associated with real physical deterioration. Forty per cent. are invalids, and a still larger proportion of those who are professional thieves. Asymmetry, though often existing in normal subjects, is much more constant and pronounced in the criminal and is frequently a characteristic mark of his family and descendants. While the weight of the brain is not now considered as being an index of its development, Mingazzini found that in 31 criminals, 8 presented brains and skulls of a size found only in sub-micro-cephalic heads. In several there were marked anomalies, while 6 others had almost the appearance of monstrosities.

In an examination of the brains of fifty criminals, Flesch found that every one presented some abnormal or anomalous condition.

The chief points of difference, however, are to be found in the convolutions and fissures. It is unnecessary to enter here into minute anatomical details, but it may be stated that while very little change has thus far been found in the neuroglia and nerve cells, the fissures throughout the entire structure present a decidedly confluent type, or in other words: "If we imagine the fissures to be water-courses, it might be said that a body floating in any one of them would enter almost all the others."

A new fissure indicates an increased development of the surrounding region, but when this is not present and the fissure results from the junction of previously existing ones, it indicates a defect in construction.

Another interesting anomaly noted by Benedikt<sup>1</sup> is, that here

<sup>1</sup>Benedikt. "Anatomische Studien an Verbrecher—Gehirnen." 1879.

the frontal lobe is sometimes divided into four convolutions instead of three, which phenomenon he considered an instance of reversion to the carnivorous type. This experience was duplicated by Hanst, who in an examination of the brains of eleven "*voleurs recidivistes*," or habitual thieves, found the same condition in four instances.

As before indicated, single defects in certain portions may have no direct signification, but the co-existence of several, involving to a greater or less degree, important parts, are indicative of, and are associated with, other physical or moral deteriorations. As Benedikt<sup>1</sup> truly affirms, "they are to be viewed as an anthropological variety of their species, at least among the cultured races."

In addition to these defects may be noted the existence of diseased conditions of the blood vessels, membranes, and cortical substance which Flesch and Lombroso<sup>2</sup> found to exist more frequently in criminals than in the typical insane.

In connection with these anomalies, it is interesting to recall the definition of insanity which latter Tuke<sup>3</sup> describes as: "A symptom of various morbid conditions of the brain, the results of defective formation or altered nutrition of its substance induced by general or local morbid processes, and characterized by non-development, obliteration, or perversion of one or more of its psychical functions."

Strange to remark, this suggests at once, the brain of the moral delinquent whose mental and anatomical condition could be no better described. Indeed when the lesions of both are contrasted, we are at times unable to mark a distinction between the brain of the insane person and that of the criminal himself.

Irrespective of pathological defects, and from a study of the purely psychical manifestations, several authorities have relegated at least two of the five typical classes of criminals to the category of the insane, thus furnishing additional evidence of the plausibility of the theory advanced.

Their mental characteristics must then be more or less in

<sup>1</sup>Benedikt. "Kraniometrie und Kephalomatrie." 1889.

<sup>2</sup>Osler. "On the Brains of Criminals." 1882.

<sup>3</sup>Tuke. "Dictionary of Psychological Medicine."

accordance with their physical condition. Intelligence, in the true sense of the word, is commonly impaired. While Marro found this to be the case in twenty-one out of five hundred cases, the ratio is undoubtedly far greater than this. The delinquent is noted for his cunning, his smartness, and his ability to escape detection. He has a superficial, practical knowledge which covers marked mental defects. "I have acquired the certainty," says Despine, "in considering the moral insensibility of the criminal," that those who commit crime in cold blood never experience moral remorse. I found that those who manifest acute sorrow or real remorse after a criminal act, have committed the act under the influence of violent passion, or by accident without intention."

He is, as a rule, emotional. He craves excitement of all kinds. Drinking, gambling, and orgies of every character appeal to his sensibilities. Though subject to fits of emotion or violence, he is naturally indolent and requires a strong incentive to active, voluntary exertion.

In addition to his sexual anomalies which are well marked, the many and varied forms of sexual perversion form no small part of the *tout ensemble* of the criminal. These phenomena have behind them causative factors which are not generally recognized. They depend only to a certain extent upon perversity or vicious influences, for they have an anatomical basis. Several German investigators, who have given this matter careful study in the light of an immense experience, are quite generally in accord as regards their etiology. Schrank-Notzing<sup>1</sup> of Munich says: "As a rule these anomalies are certainly only symptoms of a constitutional malady or a weakened state of the brain, which manifest themselves in various forms of sexual perversion." Krafft-Ebing,<sup>2</sup> in his monumental work on this and similar affections, confirms these conclusions by describing such perversions as the result of a general neuro-pathic condition, such as an arrest of mental development or a condition of psychical degeneration or a psychosis.

Take, for example, what is often a type of sexual perversion

<sup>1</sup>Schrank-Notzing. "Die Suggestions-Therapie." 1892.

<sup>2</sup>Krafft-Ebing. "Pyschopathia Sexualis." 1890. Krafft-Ebing. "Grundzuge der Kriminal Psychologie." 1872.

—namely, the prostitute. In addition to a strong hereditary taint of several different kinds, elsewhere noted, she exhibits to the degree of 80 per cent., signs of physical degeneration in the cranium, ears, teeth, and palate. While the face may be delicate in contour, the jaw is square and heavy. The eyes are blue, and often show bichromatism of the iris. The hair is light and abundant, and the lips and eyelids are large and prominent. Added to these are many of the physical signs previously noted as belonging to the criminal.

There is, moreover, a weakness of intellect, a strong neuro-pathic tendency, and a manifest impairment of will power. She is prone to excesses, and habits which when once acquired are seldom abandoned. She is subject to nerve storms and periodical fits of depression, and there are times when it is not discreet to either thwart or offend her. This class, like the others, has its grades and phases. The make-up of Phryne was quite different from that of the Roman camp-follower, and the woman of the slums stands out in vivid contrast with the leader of the “fast set,” who, protected by the family name or social bulwarks, and taking advantage of the various safeguards which the law affords, often indulges in propensities which stamp her as a sexual pervert of a pronounced type.

The nature of these degenerative phenomena has been fully considered in the recent work of Nordau,<sup>1</sup> who finds the evidences of such defects in many of the celebrities of our latter day civilization, and in many of our “realistic” authors whose writings are under the ban. In one of the recent apostles of aestheticism may be found a vivid illustration. That such individuals are fully responsible at all times is quite improbable. “These human beings,” says Sergi,<sup>2</sup> “are weaklings, and though surviving in the struggle for life, carry the more or less evident marks of their weakness. They survive in an inferior state and are ill-qualified to contend with the phenomena of the struggle.”

The researches of Darwin and Spencer, together with those of the late German school, of which Weismann<sup>3</sup> is the best

<sup>1</sup> “Degeneration,” Nordau, 1895.

<sup>2</sup> “Degenerazione Umane.” Sergi.

<sup>3</sup> Weismann. “Die Continuität des Keimplasmas.” 1892.

known representative, afford many illustrations of the variable but infallible laws of heredity. The atypical brain is transmitted in a more or less modified form to those who follow. The *defects* of the father are visited upon the children and the children's children, while the defective mother bestows an heritage of crime, insanity, or other disease which reaches down through successive generations—we know not how far.

Morel,<sup>1</sup> however, contends that the offspring of these who supply types of progressive degeneration ultimately arrive at a stage of complete sterility, after which it is impossible for the individual to further transmit the condition.

It must not be presumed that, in the process of transmission, like invariably produces like. In this particular class under consideration, *every delinquent, through the influence of external conditions, selects, as it were, from the family defect, his own peculiar vice or failing.* "Society makes its own criminals," yet though the nature of the social conditions usually determines the character of the delinquency, there may be a direct transmission of a condition upon whose expression the will is not strong enough to exercise a controlling force. Consequently in the descending scale of deterioration, a parent may beget children, one of whom may be a thief, another a prostitute, another an inebriate, and a fourth who may be insane.

According to Ellis, whose summary is here quoted, nearly 14 per cent. of the inmates of the Elmira reformatory have an insane or epileptic heredity. Of 233 prisoners at Auburn, over 23 per cent. have a similar history. Out of 266 criminals, 195 were found by Virgilio to be affected by some form of hereditary disease. Koch found the ratio to be 46 per cent. while Marro's attained 90 per cent. Sichard, from an examination of 4,000 German criminals, found an insane, epileptic, suicidal, or alcoholic heredity in 36.8 per cent., incendiaries 32.2 per cent., thieves, 28.7 per cent. sexual offenders, and 23 per cent. sharpers. The observations of Tarnowsky,<sup>2</sup> already referred to, show that prostitutes frequently have an hereditary history of alcoholism, phthisis, syphilis, and nervous disease, while of this

<sup>1</sup>Morel "Traite Des Degenerescences." 1857.

<sup>2</sup>Tarnowsky. "Etude Anthrometrique sur la Prostituees et les Voleuses." 1889.

same class Krafft-Ebing<sup>1</sup> says: "The anomalies are often the sign of an abnormal nervous system which is for the most part hereditary."

The existence of purely criminal families in which crime has been a distinguishing feature through many generations, has been frequently commented upon. Thomson cites an example in which there were six convicts in a single household. Despine<sup>2</sup> quotes a case of three brothers; the first had seven children, of which there were five thieves and one murderer; the second had two children both of whom were murderers, while the only child of a third was a thief and a murderer. The history of the Juke family is perhaps better known. Originating from poor ancestry it attained the number of about 1,200 persons, of which 709 could be traced. Of these, 180 were paupers and vagabonds, 76 were criminals, while of the women as far as the sixth generation, 52.40 per cent. were prostitutes.

History is replete with instances like these, in which the deterioration of a family, produced by inter-marriage, the action of a double taint or other causes, is marked by various forms of crime, disease, or delinquency which seem to be only phases of the same atypical condition.

In this particular, the phenomena of atavism and reversion, instead of discrediting this theory, afford a strong argument in behalf of natural laws.

Both as a cause and result of abnormal conformation, inebriety also affords many illustrations. Of the 4,550 inmates of the Elmira institution, drunkenness was found in one or both parents in 38.4 per cent., though it was undoubtedly much more. Of the 71 examined by Rossi, the father was found to be a drunkard in 20 and the mother in 11 instances, while Marro<sup>3</sup> discovered in 41 per cent. of criminals a similar heredity. "Of 100 inebriates," says Crothers,<sup>4</sup> "60 will be found with defective brain or nerve organization. Of this number 30 will have drunken parents and 20 will have an epileptic, criminal, insane, or other history, while 10 will have rheumatic, consumptive, or

<sup>1</sup>Vidal. "Etat actuel de L'Anthropologie Criminelle." 1892.

<sup>2</sup>Dugdale. "The Jukes. A Study in Crime, &c." 1877.

<sup>3</sup>Migliaio. "Il Mondo Criminale Italiano." 1893.

<sup>4</sup>Crothers. "The Cause and Cure of Inebriety." 1887.

diseased parents. Inebriety in the children of these, is simply a phase of degeneration."

Maternal influences have a particularly marked effect upon the succeeding generations. Laurent found hysteria very prevalent in the mothers of criminals, while Lucas<sup>2</sup> has recorded 279 cases of mental disease with moral obliquity which could be traced directly to such origin. The parental effect of alcoholism, nervous disease, and crime is particularly noticeable in sexual offenders.

One frequently encounters cases with such histories, which though practically insane, are not so in the ordinary acceptation of the term. They are emotional, intractible, and unbalanced. Their atypical condition precludes the possibility of recovery, yet their career may be uneventful until, under proper incentive or the force of circumstances, they develop criminal tendencies or moral perversion.

Benedikt says: "An inability to restrain themselves from the repetition of a crime, notwithstanding a full appreciation of the superior power of the law and a lack of the sentiment of wrong, though with a clear perception of it, constitute the two principal psychological characters of that class to which belong more than one half of condemned criminals.

No attempt is here made to attribute each and every crime to an anatomical defect, yet I believe that more extended investigations will eventually result in a new classification of criminals, and that of the five recognized types—the insane, the instinctive, the habitual, the occasional and the criminal by passion, three and perhaps four will, for physical reasons, be in part absolved from moral responsibility.

While the more obscure forms of moral delinquency have not yet received legal recognition, the supreme courts of at least ten of our states have accepted moral insanity as tenable defense when it could be clearly proven.

Crime in many instances, calls for treatment rather than punishment. "He who opens a school," says Victor Hugo, "closes a prison." The common jail is a relic of mediaeval times, and must eventually give place to institutions which are

<sup>2</sup>Lucas. "L'Heredite Naturelle." 1882.

reformatory and which have greater facilities for moral, mental, and physical training.

I have endeavored in the foregoing pages to state a few of the leading principles of modern criminal anthropology. Limited time and space do not permit of anything like a full consideration of even its leading features, while the many side issues which are extremely interesting, and lead into inviting fields of thought and investigation, I have been obliged to wholly ignore. Otherwise, one might give in detail the natural history of each variety of moral perversion, for these various classes have their own peculiar characteristics and their own individual vices of confirmation. Moreover, the doctrine of heredity as propounded by Weismann is too abstruse and technical to permit of consideration here, yet upon it rest many of the theories of the later school, and by it we are able to secure light upon problems which were hitherto unsolved.

It suffices for me to simply call your attention to the later developments in this department of science, and to outline the principle of a study which has a most important bearing upon many of the vital questions of the day.

# DISSERTATION.

ON CANCER, WITH ESPECIAL REFERENCE TO RECENT  
STUDIES AS TO ITS CAUSE AND TREATMENT.

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BY GILMAN D. FROST, M. D., HANOVER.

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A man, sixty years old, comes under observation. He says he noticed, about six months ago, something like a wart on his lower lip. He picked at it and rubbed it off, leaving a small, raw surface. This scabbed over but did not heal. It discharged a watery matter, not offensive to the smell, and the discharge loosened the scab frequently, so that it came off again and again. When the floor of the ulcer could be seen it was hard, uneven, reddish in color, somewhat inclined to slight bleeding. The edges of the ulcer have been for some time hard, and somewhat thickened. There is no sign of surrounding inflammation and little, if any, pain. The sore lies just at the junction of the skin and mucous membrane of the lip, and is slowly but steadily increasing in width and depth, so that now we find skin and the connective tissues beneath all involved. There is some enlargement of the lymphatic glands beneath the lower jaw, and they feel hard, but are not adherent to the skin over them.

Such an ulcer, if left to itself, will repeat the processes already described for months, or perhaps years, before it attacks the deeper and adjacent structures, but sooner or later it will attack all the soft parts, then the bone of the lower jaw. Meantime, infection of the neighboring, and then the more remote cervical lymphatic glands occurs. They break down, ulcerate and bleed, the jaw breaks, the growth of the ulcerated surface becomes more rapid, the general health suffers from the increase of pain and loss of blood, the strength fails, the patient loses his hope and his grip, the process of growth and breaking

down becomes very rapid, the discharge profuse and offensive, and the victim dies. The whole process may have lasted two years; it may have lasted five years, or even longer.

A man of forty years states that he has had some difficulty for the past year in defecation. The act is somewhat painful, and is getting more so. He has no hemorrhoids. There is, however, some blood and some mucus mixed with the fecal matter, and he has noticed at times an unusual odor. The matter passed through the bowel comes in thin, ribbon-like masses, or small, hard lumps, and can be passed only by considerable straining. He is troubled with alternate constipation and diarrhoea. His general condition is not quite as good as usual. He is anxious and worried about his condition.

Rectal examination proves that about two or three inches above the anus there is a thick mass of new tissue, in part surrounding the bowel, in part crowding its way backward toward the spine and growing into the muscular coats of the intestine and perhaps further back into the connective tissues behind the intestine. The lining membrane of the gut presents an ulcerated spot an inch in diameter, with everted, hard, thickened edges, and a hard floor, rather irregular to the feel. There is here some tendency to bleeding from the pressure made in the examination, and some pain is caused by this examination. No lymphatic glands in the region can be felt. The lumen of the gut is considerably diminished, and cannot be much enlarged.

This case, if left to itself, will grow steadily worse. The lumen of the intestine will finally become entirely occluded, and, before that, so much obstructed that the patient will suffer greatly from bloating with gas and from the failure to get proper movements of the bowels. The lymphatic glands of the interior of the abdominal cavity will enlarge. In the liver particularly, possibly in other internal organs, toward which the lymph current is carried from the rectum, deposits of new material similar to that found in the rectum will sooner or later occur. These may be in the end the cause of death from hemorrhage there occurring. As before, when general infection has occurred, if the lumen of the gut has not already become occluded and thus killed the patient, we shall have a general failure of vital power from the discharge from the ulcer, which gets steadily more profuse and more offensive.

from the hemorrhages and from worry. After a period of varying length, probably inside of three years from the beginning of trouble, the patient is dead.

A woman, forty-five years old, presents herself with a small, rounded, uneven mass in one of her breasts. She first noticed it about a year ago as a much smaller lump, which moved freely under the skin, gave her an occasional sharp twinge of pain, was firm and not particularly tender. Since then it has slowly but steadily increased in size, has become more uneven to the feel, the skin over it has now become adherent to it, and the nipple has been drawn in toward it. Within the last two weeks she has noticed that the skin over the most prominent part has become purplish in color, and the veins leading away from it show plainly. There are some small, hard masses to be felt, with difficulty, between it and the arm-pit, and possibly one can be felt in the apex of the arm-pit. Occasionally a sort of neuralgic pain runs down the arm toward the fingers, and any tight band about the arm causes the fingers and hand to swell more readily than formerly. Her general condition is pretty fair. She eats well and sleeps well, but her color is rather poor. She wants to know whether that lump means anything.

Lest to itself this case will have about this history. The purplish skin over the most prominent and adherent part of tumor will break down and an ulcer will form in a few weeks. This ulcer will increase in width and depth steadily, its edges will be everted, raised, hard, its floor will be rough and firm, inclined to bleed readily though slightly. The formation of new tissue will go on at the outside of the tumor, while the first formed part keeps on ulcerating. Extension of the growth through the lymphatic vessels to the remaining lymphatic glands of the axilla, thence to those of the neck, and through the intervals between the ribs to the organs in the interior of the chest, may follow. As these glands enlarge, by pressure on the veins in the axilla, the return circulation will be so much impeded that great swelling of the upper extremity will result, and this same pressure on the great plexus of nerves in the armpit will cause tingling, numbness, and sharp, stabbing pains in the upper extremity. As in the other cases, death come finally as the result of the drain made on the general health from the dis-

charge, hemorrhages, pain, anxiety, and loss of appetite, proper food supply, and sleep.

Such a result will usually occur in about two years from the onset of trouble in cases like this. Only occasionally does the process once started stop of itself. This does occur, however, the new growth being formed so rapidly as to shut off its own blood supply almost entirely, while meantime other changes, the result of the formation of fibrous tissue, cause the mass to contract in size—the so-called withering cancer, but in such a case, as in some cases after operation the tendency is to a recurrence of the disease, either in the same or a similar form in some other part of the body at a later time.

Finally, we have the case of a boy of eighteen who found two months ago that one of his testicles was growing painful and larger than its mate. The tumor became irregular in its outlines, was very fully supplied with blood, so that the subcutaneous veins of the scrotum became in a few weeks very noticeable, hemorrhages into the interior of the gland occurred repeatedly and were extensive and now the skin over the mass, partly gland, partly tumor, has broken down and ulceration is very rapidly proceeding. The tumor is soft and elastic, softer in some places than in others, and now has reached the size of two fists, the edges of the ulcer are thin, the discharge is foul, the discomfort is marked, but the pain is not severe. The lymphatic glands of the groin are much enlarged, some of them firm, others soft to the touch.

Left to itself, this case will progress very rapidly. In a few months the patient will be dead. Indeed, cases like it are recorded where in eight weeks from the time of the first appearance of the new growth, the tumor has attained the size of a child's head and killed its victim.

These four cases are all examples of cancer. Each may be taken as the type of its class. There are other classes, less common and less important, which I purposely omit. We have studied these cases with the eye and finger. Now let us get out the microscope and make sections of such tumors, to understand if possible what is the nature of such a new growth. And first, it may be well to find out,

1. What a *cell* is, and what its bed or stroma is. This audience need not be reminded of their structure.

2. What a *tissue* is, viz.: a part of the body made up of characteristic structural elements.

3. What the *four classes* of normal tissues are, viz.:

- (1.) Epithelial,
- (2.) Connective,
- (3.) Muscular,
- (4.) Nervous.

4. What the *forms of epithelial cells* are, viz.:

- (1.) Squamous,
- (2.) Cylindrical,
- (3.) Acinous, or spheroidal-glandular.

Taking up the first case described, the cancer of the lower lip, we find an example of a

(1) *Squamous-celled or Epidermoid Cancer*.—This new growth springs from squamous epithelium, as the skin and certain mucous membranes. The essential elements in its structure are columns of flattened epithelial cells, growing in an imperfectly fibrillated stroma, with small round cells, few in number. Growth takes place steadily in all directions. The tumor of epithelial tissue “breaks down its connective tissue limit,” has no lining or bounding membrane, has little stroma, and when growing toward the surface results in the warty, cauliflower-like appearance which soon gives way and causes the ulceration described above. Blood vessels run in all cancers in the stroma, hence when stroma is plentiful, the hemorrhage is always little, though easily started, but when stroma is less in amount the blood flows more freely and more readily. Cell nests perhaps occupy lymphatic spaces.

Usual seats of epidermoid cancer are the tongue, lower lip, cheeks, gums, genitals.

The second case described is one of

(2) *Columnar Celled Cancer*.—This begins as papillary outgrowths from the surface of mucous membranes or glands opening upon such membranes.

*Structure*.—Tubes of columnar epithelium bound together by delicate connective tissue with small round cells surrounding the tubes. The cell tubes communicate freely with lymphatic spaces.

Usual seats—rectum, intestine, uterus.

(3) *Spheroidal-celled Cancer* only grows in connection with glands; appears in three forms:

- a. Scirrhous or Hard Cancer.
- b. Encephaloid or Soft Cancer.
- c. Colloid Cancer.

(a) Scirrhous or Hard Cancer.—Of this the third case is an example. Here we find the typical alveolar arrangement of cells and stroma. The epithelial cells are enclosed in spaces, probably derived from the original lymphatic spaces of the invaded tissue, and surrounding these nests is the stroma, here abundant and fibrillated, containing some round cells like the white blood cells. As the stroma grows it encroaches on the cells and causes the contraction and later the obliteration of the blood-vessels which lie in its midst. Hence the tendency of the older portions of the growth to break down and ulcerate. Hence also the creaking of this form of cancer when cut with the knife and the cupping of its cut surface. From this cut surface a fluid of whitish color can often be scraped, so-called cancer juice, which is made up of a serous fluid, cells, free nuclei, and granular matter. It does not seem to be infectious. No surgeon fears to handle cancerous matter freely even though there be abrasions on his hands. But some experiments tend to show that it is possible to infect abraded tissue with it. This form of humor rarely attains the size of a fist, is slow in its growth, is sure to involve the neighboring, and, later, the remote lymphatic glands and when removed usually recurs, either in the scar or in some distant part of the body, in the latter instance sometimes in the form of a soft cancer.

Usual seats—breast, oesophagus, pylorus.

b. The fourth case described is one of encephaloid medullary, or soft cancer. This has the same elements of structure as the last into which it passes imperceptibly, so that no sharp line can be drawn between the two, and in some cases it is quite impossible to say which form we are dealing with. But in the typical form soft cancer has many cells, little stroma, many blood vessels. Hence it grows more rapidly, ulcerates very early, is very prone to extensive hemorrhage into its substance or externally, is very rapidly disseminated through the body by the lymph channels, forms large, soft tumors which cut like brain-

substance, whence the name encephaloid, often develops small cysts in its interior and has cells which often undergo fatty degeneration. As aforesaid, this form often attacks secondarily internal organs, where the primary tumor was scirrhus.

Usual seats—testis, liver, kidney, ovary.

(c) Collloid Cancer. This is derived from either scirrhouss or encephaloid cancer. The contents of the alveoli undergo a sort of mucoid degeneration. Of this form I have not given an example. It is rare; usually attacks the stomach, intestine, ovary, omentum.

#### CAUSES OF CANCER.

These may be either (1) constitutional or (2) local. *Under the former head* are included, residence in certain localities, slow degeneration attending old age, heredity.

As to residence.—The records of mortality kept for long periods in Great Britain show that certain parts of the kingdom are more thoroughly infected with cancer than others. These localities have long been so infected. But rats have been kept in cages with floors of earth from these districts, have been fed on cancerous meat, cancerous matter has been soaked in their drink, the air they breathed has been kept moist with cancerous sprays, and yet they did not die of cancer.

As to the slow degeneration of old age,—little of definite value is known. That cancer is a disease of middle and later life is well known. It very rarely attacks the young and vigorous man.

As to heredity.—Some very notable instances of the way cancer appears and reappears in a family have been collected and are given in many of the older works on surgery and surgical pathology; of these a series reported by Dr. Warren is remarkable. A man died of cancer of the lip; his son of cancer of the breast; two of his sisters had mammary cancer. A daughter of one of these women died of cancer of uterus, secondary to a cancer of the breast. A daughter of the man had cancer of the breast. In another case a man died of cancer of the penis. He lost his father, grandfather, and great-grandfather from this same disease.

*Under the head of local causes* we find many cases where long continued irritation, *e. g.*, that of a pipe upon the soft parts of the lower jaw and lip, seems to be the predisposing local cause. Others, like a chronic abscess of the breast, which may remain quiet for years and then result in a cancer. Again we find that primary cancers occur often at orifices and points of constriction of epithelial tubes. Possibly here they grow from abrasions, which later get infected. Similarly the pulling of a tooth results sometime in an injury to the soft parts which is followed by a cancer.

Epithelial formations have been transplanted to animals from man, and from animal to animal. Glycerine extracts of cancer from man have been injected into animals; cancers have resulted. Cancerous tissue from one part of a person's body has been grafted upon another part. Bacterial origins for cancer have long been sought, but at present are abandoned.

Finally we come to the question of the parasitic origin of cancer: Pfeiffer, 1888, saw sporozoa in cancerous tissue. 1889, others found bodies like coccidia. 1889, Thoma found small cell-like structures in the nuclei of epithelial cells. 1890, Sjöbring found bodies like protozoa. Sondakewitch found in cells and cell nuclei, small round or oval bodies, sometimes with a membrane about them probably coccidia.

*Per contra.* 1. The coccidian forms are by many held to be merely endigenous cell-formations. The sporocyst forms to be derived from the cancer tissue by cell degeneration.

2. Gibbes concludes after careful study that the supposed results, protozoa, are due to faulty ways of staining.

3. Cornil thinks it very easy to mistake the processes of cell formation, karyokinesis, etc., for new growth formation.

4. 1890, Russell describes as the cause of cancer a fungus; the fuchsin body he calls it. His statement attracts little attention, for such bodies are found where no causes exist.

1895, after numerous experiments made by himself, Dr. Allen J. Smith, professor pathology, Galveston, concludes, (1) cancer presents a cause and clinical aspect analogous to those of formations of parasitic origin; (2) within cancerous

tissues occur bodies which closely resemble the different life stages of protozoa, sporozoa, of gregarinidæ.

(*N. Y. Med. Journal, Jan. 5, 1895.*)

Woodhead states that, "Many observations have been made on the invasion of epithelial cells by certain forms of parasites. Zoölogists find coccidia, etc. Pathologists find such organisms in epithelial tumors. Whether these parasites are causal or after effects is a question, but their invariable occurrence in these epithelial cells and the proliferation they cause in the lower animals demands the granting of the possibility."

Dr. Coley, of the New York Cancer Hospital, says: "Personally, I believe the evidence at present strongly in favor of the micro-parasitic theory of origin of both sarcoma and cancer."

#### TREATMENT.

First and most important, excision. About fifty per cent. of mammary cancers before axillary infection are cured. Eleven per cent. after complete cleaning out of glands of axilla and those above clavicle. The removal of the pectoral fascia is always advisable.

In cases of cancer of lip, statistics vary much, but on the whole, are more favorable than for mammary cancer, if excision is complete.

Rectal and uterine cancer, as well as cancer of the upper intestine and the glands opening into it, is little affected by operation; it recurs very certainly. The comfort of the patient, however, is often greatly increased by an operation.

Treatment by caustics is now little used by regular practitioners, is very painful, and is unsatisfactory in results.

Lately many cases of cancer, otherwise inoperable, have been treated by giving the patient erysipelas in the region affected. Still more lately toxines of bacillus prodigiosus have been tried. Up to May 8, 1895, Dr. Coley says, in the past four years he has treated with mixed toxines of erysipelas and bacillus prodigiosus eighty-four cases of sarcoma, twenty-seven cases of cancer. Successful results have followed in eleven cases of sarcoma and in two of cancer. He no longer tries this method in cases of cancer.

DR. DOUGLASS, of New York.—The subject of Dr. Frost's paper is one that interests me. He does not mention one means, which I have been using, that was advocated by the late Dr. Leaming, of New York. It seems very simple, and yet in a number of cases I have no doubt that it was efficacious in removing that which appeared to be cancer. It is extremely difficult to say that a certain case in its incipient stage is or is not cancer. Dr. Leaming's idea was, the use of *Thuya occidentalis*, or common white cedar. It seems so simple that we would, perhaps, disregard it, but I believe it to be worthy of trial in cases where we have nothing better—and I do not know of a drug more likely to succeed. I have used it in a number of cases of cancer of the breast. A few years ago I had four or five cases within the year of cancer of the breast. In all of these cases I prescribed an ointment containing two drams to the ounce of the fluid extract of *thuya*. In two of the cases the patients were very negligent, refusing or neglecting to use this ointment. In both those cases it was necessary later to excise the breast. The other three (I think there were three who used faithfully this ointment) recovered. I also prescribed some of the fluid extract to be taken internally, and in all of those cases the trouble entirely subsided.

I saw only last week a young woman whom I mentioned above as having neglected to use this ointment because it was so much trouble, and had the left breast amputated. A similar trouble in the right breast some weeks ago attracted her attention, and she commenced using that ointment. Although the lump in her breast had grown large and was painful, it had subsided and was not larger than an ordinary bean when I saw it. I do not believe *thuya* will cure all cancers, but it appeared to help those cases.

Another case appeared to be a cancer on the face of a gentleman. He had a cedar tree growing in his yard, and I said to him, "When you go past that tree pick some leaves, chew them, wet your finger with the saliva, and rub on the spot." He did that faithfully, and the threatening cancer disappeared. I give you these instances for what they are worth.

I am interested in Dr. Coley's processes. I heard him read a paper on this subject before the New York Academy of

Medicine, and there seemed to promise in his experiments good results; but he cures only a portion. Dr. Johnson, of Paterson, had a very interesting case of sarcoma of the soft palate, that was entirely relieved by the use of injections of the preparation that Dr. Coley advises. These are interesting to us who have such cases under our care, and I suppose they come under the observation of every physician.

DR. GRAVES.—I have had very few cases since I read my paper here two years ago on the same line, and do not know as I have anything new to offer. That was on the use of sulphate of magnesia, Epsom salts, which at that time I had used with very good results. Since that time I have continued the treatment wherever an opportunity offered itself, I think with the same good effect, although I have increased the quantity of the dose that I gave at that time.

## DISSERTATION.

### THE GERM CONSIDERED AS A PRIME FACTOR IN THE PRODUCTION AND TREATMENT OF DISEASE.

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BY S. W. ROBERTS, M. D., WAKEFIELD.

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*Mr. President and Fellows:* “Canst thou by searching find out God? canst thou find out the Almighty unto perfection?” Certainly, say our modern scientists, the heroes of microscopy. We readily trace “his footsteps in the sea,” and we ride with Him “upon the storm” with perfect equanimity, knowing the why and the wherefore of the forces that produce the storm and the exact and perfect methods by which the craft is guided through it.

Another equally prominent writer in the Bible makes the assertion that “the thing that has been is the thing that will be.” Scarlet fever is certainly a thing that has been. But these same scientists can easily stamp it out by thorough isolation and disinfection.

A worthy contributor to our last Transactions represents our profession in the past as groping in the dark, foundering about in a wilderness of uncertainties. But of late, through the microscope, it has made such rapid advances towards perfection, that it will in the very near future become an exact science. Even now the *game* of disease is thoroughly understood: just what variety it is. But then the quality and quantity of ammunition to be used, and the kind of fowling-piece to use it in will be as well known. So if there is any failure in laying low the game, it must be attributed to imperfect aim. Then, indeed, our profession will not be one of guesses and placebos, but of specifics.

Oh, how we rejoice that after the long, *long* era of darkness, at last—at last—the light has come! We do feel like shouting Glory, hallelujah! and singing,—

Joy to the world! The light is come.  
 Let earth the welkin ring;  
 Let every heart make for it room,  
 And heaven and nature sing  
 Joy to the world, for science reigns;  
 Let men their songs employ,  
 While fields and floods, rocks, hills, and plains,  
 Echo the sounding joy.  
 No more will doctors have to guess,  
 Nor sweet placebos use;  
 Specifics will end all distress,  
 And both of them excuse.  
*They'll* cleanse the world of every ill,  
 And make creation prove  
 How glorious and wonderful  
 Is their fast onward move.  
 No more will *sores* with sorrow grow,  
 Nor germ infest, or wound;  
 Science will deal the fatal blow  
 Just where that *curse* cup is found.

Oh, that my head “were waters and mine eyes a fountain of tears;” that I might suitably lament the fact that I was born in darkness, reared in darkness, educated in darkness, and have been stumbling in darkness all my long professional life; that I might weep day and night over the promising sons and fair daughters of my people that I have permitted the *Imp* of disease to slay, by bringing my artillery to bear, not on him, but his surroundings! And yet, should I chide myself? Unless from the fact that I doctor *non nascitatus sum*, and should have known I was unfit naturally for my profession, and should not have engaged in it. I have reared the best superstructure I could on the foundation laid for me by Peaslee, Phelps, Crosby, and Smith, not to mention other and brilliant men, and at that time, leading members of this ancient and honorable society.

“Their sun is set; it’s twilight yet.  
 Flushes the chambers of the sky  
 A softer flame—of spreading fame  
 A glory that shall never die.”

And we should say,—

“The fountains they opened  
Are still gushing by the way,  
And the world for their living  
Is better to-day.”

We should rejoice that just as our sun is setting, giving us a forecast of a world so soon to be rejuvenated, the day-star is rising to confirm it. No more plodding and theorizing; no more mystery about the facts of life; no more mystery about the perfections and falsely called imperfections of nature, or of its Godhead. For the germ of eternal existence, discovered in the last sands of the nineteenth century, explains all. And his annihilation, sure to be effected by thorough isolation and disinfection and the proper use of specifics, will remove all the imperfections, and naught but the perfections will remain.

Through the destruction of this malignant parasite, the millenium must be at hand. As the science of to-day, through the microscope, that he, emanating from the devil, is at the bottom of all devilishness, will undoubtedly prove.

But, must we descend the Mount of Transfiguration, on which we would gladly build more than three tabernacles to those very eminent physicians who have shone with more than celestial light on our profession? Must we turn from the prophetic view of a sinless and non-diseased world to the reality? And what the reality? A world of sin and disease. A world, nine tenths of whose teeming millions live beneath the brute that dwells among them. A world full of crime, and that increasing, especially in the so-called Christian nations. A world in which the why and the wherefore of the facts of life, of the Godhead of nature, we know as little about now as did the ancient sage of Uz.

Fellows, when the subject announced in the programme was selected for this paper, the writer had no intention of combatting the germ theory. How can we combat, or sustain, that which we know little or nothing about? Bacteriology we have studied only from results in our actual experience in the so-called germ diseases. Yet grant that the germ is found in certain diseases, is it certain that it is not a result and not a cause?

*Omne vivum ex ovo* is true of all animal life. In every species of animal the female has her peculiar place in which to deposit her egg. Many, and sometimes from causes unknown all, of the eggs of the nest fail to hatch. So, sometimes in diphtheria, even in fatal types, the bacteria cannot be cultivated. In such cases the ovum must be either absent or blighted. In either case it could not be the cause of the disease.

Whence the parent of this ovum we know not. But the paraphernalia made and the rigmarole the modern surgeon, accoucher, and physician in attendance in contagious diseases go through with, such as the boiling of knives, the scraping of nails, the rubbing and shampooing, using various soaps and disinfectants, having four different implements for cleansing the axilla, groin, flexures, and sphincters especially, one for the up-wipe, one for the down-wipe, one for the dry-wipe, and the fourth for the polish—all prove the belief of the actors in this drama, that the parent lives in God's not always pure air. This being their belief, what can they expect to do in stamping out, or even curtailing, any disease caused by the germ, by thorough isolation and disinfection? Our experience in these diseases does not in the least prove that it has done either. We could as readily bottle up Aurora Borealis, or cleanse a thousand acre swamp of the fly and mosquito by thoroughly isolating and disinfecting the animal on whose back a few of them ride from the pasture to the enclosure. And how does it happen, on this theory, that some of our most malignant diseases, where this isolation and disinfection was not resorted to, have appeared but once? As witness, the plague in London; or, among others, the disease called spotted fever, that prevailed in some parts of New Hampshire three fourths of a century ago.

Some sixty years since, Dr. Jacob Bigelow announced the following: "All self-limited diseases are not cut short, nor much modified, by the action of medicines."

If medicines or medical treatment do not limit or much modify disease, what does? When disease enters the arena of the human system, it always arouses an antagonist there. This destroyer of life always finds a combatant in the preserver of life. Once begun, the combat continues till one or the

other is overpowered. The battle may last from one day to many years. We had a patient recently where disease over-powered after thirty-five years' contest. In the hands of this warrior, drugs and nourishment may be, and often are, powerful implements. But when they consist of two and one half quarts of milk and a quart of whiskey per diem, to say nothing of a small apothecary shop of medicine, in the meantime, of course, the warrior is handicapped, palsied, in the house of his would-be friends. And the disease has a walk-over.

The name of this silent, quiet, out-of-sight, without bombast or spread eagle, but powerful warrior, against the Gorgon-headed warrior disease, need not be given. We all know him, and all have to depend upon him to lead in the combat. And we should be the more sensible physicians, and should slay all the more Goliathis if we placed in David's hands such armament as he could successfully wield, and did not handicap him with the armor of the over-grown Saul. The germ, considered as the prime factor in the production and treatment of disease, completely ignores the power of this prime factor in the cure of it, and in our view is the grand objection to its adoption in practice.

Another objection, it makes all its diseases local, with constitutional manifestations. Hence the theory that, ordinarily, all the treatment required is local. Unless, should the constitutional manifestations be dangerously severe, then the blood must be so filled with alcohol as to scorch the microbes,—of course nothing else would be scorched by it, if they swim in it, or try to swim in it, from the nest to new locations. We can see the reason of the germists for the free, not to say excessive, use of alcohol under such circumstances, but why the inside should be filled to overflowing with beef juice and milk at the same time, unless sure work is meant by wrenching the germ's stomach when the brain is paralyzed, we do not see the reason.

The third objection is: It makes all its diseases entities. Remove the entity and the cure is complete, except that sometimes the goose is killed by attempting to extract the not always real addled egg.

Shall we now give a little of our experience in two or three so-called germ diseases?

Diphtheria. We heard nothing of this disease when studying medicine, from '50 to '53. The word was not in the medical vocabulary of that day. In July, 1854, I first saw cases in Alton, N. H., in the family of a well-to-do farmer, in a neighborhood that had been inhabited more than fifty years. No isolation or disinfection was resorted to; a public funeral, as two out of three children died, the funeral at the village church. Whence the germ in these first cases? And why did not the disease spread, as it did not, in that region? In August, same year, I had the care of a boy of two years, half a dozen miles from this place, in the edge of Barnstead. He was the child of a farmer, and in a very healthy location; had had no connection with the former family. The child died. No isolation or disinfection; a public funeral. The first, and for aught I know, the only case of that region. In July, 1855 or '56, it appeared eight or ten miles from the first location, at East Alton. The place had been inhabited most seventy years. It went into three families. Took all the children, two, in one family, and a part of the children in the other two. No isolation or disinfection; public funerals. No further spread at that time. The nature or name of the disease was then unknown. I have been where I now am since November, 1854. My first case in my route occurred in August, 1860. For a year or two then the journals had discussed the nature of the new comer among us and had given him a name. This case was a boy of ten years, the oldest of five living children, the child of a wealthy farmer living just over the border, on the top of an extensive as well as high elevation of land, and largely surrounded by ponds. About Wednesday this boy, with others, bathed in one of these ponds, largely made up of springs. Thursday his throat became sore. Sunday, when summoned, I found it a full-fledged case of diphtheria. The boy died in about a week from the attack. There was no isolation or disinfection; all the neighbors were in and out; a very public funeral. But this was the first and only case of diphtheria that ever afflicted that neighborhood. If a germist I should have to explain this in this way: That all the microbes that were ever in that region were confined to that pond; that every one of them fell in love with this boy's tonsils; that every one of them

clung to his tonsils, and, as in the case of Sampson, all the tormenters perished with the tormented; not one was left for seed. More than four years now elapsed when the disease appeared in East Wolfeborough, six miles from me. It was a quite fatal but not very extensive epidemic, and it continued for two years. We know of no cases in that region since this time. The origin of this epidemic could never be traced. The disease did not attack every family, nor frequently all the members of the same family. In this epidemic in mid-winter I had two severe cases, one of which proved fatal, of apparent dysentery. But in these cases I presume the microbes must have been bewildered or of perverted taste, and crawled into the rectum instead of mouth. I had another case, a boy of twelve or more, where just such a patch, and at the same time, formed in an unhealed wound on one of his legs as formed on his tonsils. Several other cases, and I have had some like them since, were as follows: First visit, little reduction of strength, cool surface, subnormal pulse, glairy, acrid discharge from both nostrils, fetid breath, furred tongue, ashen throat, slight enlargement of tonsils, and slight exudation. After a week's treatment, all of which was constitutional, the patient seemed thoroughly convalescent. Then emesis of undigested food would take place. After this continued for a few days the patient would suddenly die. Prof. Waugh says death in these cases was the result of endocarditis, the microbes floating there from the tonsils by the blood. This theory of the professor's, however, is quite as plausible as that other theory of his, that in a mixture of potash, chloras, hydrochloric acid, and Tr. Terr. Chlo., the chlorine gas eliminated in the act of swallowing acts as a local germicide, while the rest of the mixture is absorbed and acts constitutionally. Facts are stubborn, immovable things. But theories to account for facts are, we think, sometimes so stretched as to be much in the condition that a gospel minister once said the apostle's net was after they had had such glorious luck fishing,—that it was either broken, about to be broken, or in a breaking condition. At the time we had no indication of endocarditis in the cases referred to. And would it not be impossible for the chlorine to be separated

from the mixture spoken of while passing from the mouth to the stomach?

Scarlet fever we need say little about. We have seen or known more or less of it every year since the first decade of our life. But few epidemics of it have occurred within my observation. A very large majority of the cases have been isolated. No one could tell whence they came, or why so few should occur at a time, as no means were taken till within a few years to curtail or eradicate the disease. Whence the first case of this disease, if, as high authority asserts publicly, every case is the result of some preceding case? Frequently, a cambric needle in the comet's tail might as readily be traced as this preceding case.

Typhoid fever, of which we had intended to say something, we will pass over, as this paper is already too long.

DR. HILL of Dover.—Mr. President, I have not seen or heard Dr. Roberts's paper until now, although I understood what the subject was to be; a subject which has latterly received very much attention from medical men in nearly all parts of the world.

Within the last two hundred years several writers, at different dates, have hinted at or advanced theories of bacteriology; nothing positive, however, came from them and the idea lay dormant until about sixty years ago when the thought assumed tangible form and has steadily progressed, making more rapid strides within the last dozen years.

Astounding discoveries have been made, materially modifying medical and surgical treatment of diseased conditions.

When heavy teams or trains are pulling over an uneven territory they are liable to run too rapidly, or go astray, possibly become unmanageable unless brakes are applied. Dr. Roberts, fearing this germ train is running with too great velocity and possibly getting off the track, has attempted to gently apply the brakes here.

He questions whether disease is an entity or disturbance, and believing it to be the latter, thinks we are making too much of this germ theory.

Certainly some so-called facts require more evidence to establish them as such.

Much, however, is being done, and I doubt not much more will be done in this department to increase our knowledge of disease, materially aid the profession, and benefit the world.

We cannot fail to be interested in these bacteria, millions on millions, as it is claimed, in our food, in our drinks, our clothing and houses infested with invisible and infinitesimal microbes.

It is wonderful that we have lived so long and so well in utter ignorance of these teeming millions. If any are alarmed, they may be consoled by the fact that men have lived to good, ripe age without any knowledge of the existence of infusoria. Consolation may be had also from the fact that while it is claimed that there are more than four hundred varieties of bacteria, only about fifty are inimical to man.

Others, so much more numerous, are conservators of health, absorbing poisonous matter which might otherwise do us great harm.

If we can conquer these fifty, or so, varieties, we may, to a wonderful degree, escape disease or its consequences; and I am of the opinion that we can in time, since we are finding means for their destruction, and learning to pit them against each other, as is already done in many diseased conditions.

DR. SULLIVAN of Concord.—As the author of a paper read at the last meeting, I would like to say a few words, not to defend anything there stated, because I think those facts are too well-grounded to need defence, but rather not to permit this society in perhaps a silent manner to approve of all that has been claimed in the paper just read. I think we do not live altogether in the past, but in the present and the future. Men who have lived and died have been noted for their great deeds both in medicine and other branches of science, but if they were alive to-day they would be willing to join the procession and be with us. Any wise surgeon, any wise practitioner of medicine, any wise accoucheur, is not going to a case where he thinks that by his own person, or by the surroundings, he is to contaminate that patient. I think the consensus of opinion among medical men is quite unanimous that germs do cause disease, and that by preventing the entrance of germs into the system we avoid and prevent disease. I say, being the author of the

paper read last year, and naturally taking an interest in those subjects, that I hope most of the profession thoroughly believe in the theory of bacteriology; not giving consent to everything, not believing that germs run riot and cause all the ills that human flesh is heir to, but thoroughly believing that many specific diseases are caused by specific germs. Can they be remedied by specific medicine? I do not lay claim to that. There are very few specifics in medicine. But I believe and am glad to believe, that the greatest advancement made in medicines and surgery in the last twenty years has been along this very line of bacteriology, where the influence of germs has been recognized and proper means taken to combat them.

DR. ROBERTS.—Mr. President, I am highly pleased with the manner and the matter of this discussion. But I should have been more highly gratified had Dr. Sullivan explained some of the facts given, on the germ theory. “Truth is not that which we know or believe; that which is.”

# BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.

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BY HERBERT C. EMERSON.

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The critical student of medicine in his daily study of disease, has continually before him two objective points, namely, the successful treatment of his case, and the clear conception to himself of just what pathological conditions obtain. You may say that these two attainments are interdependent—they ought always to be, but too frequently are independent of each other. It is unfortunately a necessity of our imperfect medical knowledge that the diagnosis has to be often held in abeyance, while the progress of the case and the sentiments of the family both serve to render an accurate diagnosis of small moment to the physician. The diagnosis of a case is *a priori* the first step in its treatment, but the practising physician knows from experience that the most studied diagnosis does not appeal to the patient in any degree as do speedy active measures for his relief. But when the diagnosis itself is of the most vital importance not only to the physician but to the patient, his family, and the entire community as well, the physician is bound to use all the means scientific medicine has given him to meet the emergency squarely and promptly.

Prominent among the cases of the general practitioner is the very large class of “sore throats,” many of which are frequently dismissed with a prescription, and the remark “it’s nothing but a sore throat.” Happily for the other members of society, this easy assumption of a benign affection is becoming less and less common, and the unconscious spreading of diphtheria is becoming more and more restricted. The germ theory of disease stands to-day on no uncertain ground, as the established bacteriolog-

ical etiology of typhoid-fever, cholera, tetanus, erysipelas, relapsing fever and many others, abundantly testifies. It is the hope of the upholders of this theory to demonstrate a similar etiology in all acute diseases, and this expectation is steadily becoming a reality.

The foundation on which the bacteriological diagnosis of diphtheria rests, consists in the now thoroughly attested fact, that this disease is due to a specific micro-organism which can be readily isolated and demonstrated, by culture from swabbings of the mucous membranes affected. The early bacteriologists attempted to locate the infecting agent of diphtheria in the blood, but numerous examinations failed to demonstrate the presence of micro-organisms in it. Later a variety of bacteria were found in the pseudo membrane in diphtheria, and as more extended researches have proven, the specific bacterium of this disease was first recognized by Klebs in 1883, and cultivated and described in 1884 by Loeffler and is called the Klebs-Loeffler bacillus. This organism is rod-shaped, two or three thousandths of an inch in length, and has a characteristic morphology. It appears generally as a rod swollen at either end or in the middle or made up of irregular segments. It grows freely in the presence of oxygen at the body temperature, and in dried fragments of diphtheritic membrane preserves its vitality for months. It may be found not only in the exudate of pharynx, larynx, or nose, but also in almost any local morbid condition which may be concurrent. I have personally observed it in a purulent discharge from the middle ear, in the secretion of an ulcerated area after vaccination, in pus from an abscess of the leg and a paronychia of the toe, all of these lesions being coincident with the diphtheria for which these cases were brought to the Boston City Hospital.

The technique of its identification is as follows: Sterilized cotton swabs are wiped across the mucous membrane affected, and are then wiped over the surface of the sterilized culture media. It is possible to find the bacilli by direct examination of the secretion, by rubbing the swab on a clean cover glass, staining in the usual way, and microscopic examination; but the bacilli are relatively so few in number in such a stained preparation that a negative result is not sufficient evidence of

their absence in the case in question. Various culture media may be used for the cultivation of the bacilli—sterilized potato, nutrient agar or gelatine, and simple blood serum. Loeffler has suggested a mixture of blood serum and sugar bouillon, and this is now commonly used in making cultures of Klebs-Loeffler bacilli. It is easy to make, gives a very characteristic growth, and is found to present the most favorable conditions for their cultivation. The medium consists of three parts beef blood serum, and one part of a one per cent. sugar bouillon, solidified in slanting test tubes at a low temperature, and sterilized by steam. Having inoculated a test tube of the serum with the swab, the tube is then placed in an incubator, kept at a temperature of 37° Centigrade for twenty-four hours. At the end of this time numerous aggregations or colonies of Klebs-Loeffler bacilli appear on the surface of the serum, as small, raised, rounded, dry-looking elevations. With a sterilized platinum needle a cover glass is smeared with a single colony, stained with one of the aniline dyes—methaline blue in an alkaline solution being the best—and the cover glass then mounted in balsam and examined under a microscope, using an oil immersion lens of at least one twelfth inch power.

The evidence to-day is stronger than ever that the bacterium in question is the specific infecting agent of diphtheria, and I cannot do better than give a resumé of the principal points made by Loeffler in his demonstration in 1890.

First. "It is found in all undoubted cases of diphtheria." The careful and extended researches of bacteriologists of many countries support this statement, such as Loeffler, Von Hoffmann, Ortman, Roux and Yersen, Biggs, Welch and Abbott, and Prudden. The number of cases which seemingly refute this statement is steadily decreasing, as experience in examination and improved methods of technique constantly develop. In doubtful cases a single examination is never sufficient, and in apparently definite clinical cases, repeated examinations must be made before a negative result can be claimed.

Second. "The Klebs-Loeffler bacillus is found only in diphtheria." Numerous cases were formerly reported in which this bacillus was found in the throats of healthy children but these cases are open to grave doubt, and it is to be noted that such

cases are rarely heard of to-day. The recognition of very mild cases of diphtheria is now not only possible but imperative, as it is abundantly proven that cases of severer types may emanate from these mild in form.

Third. "As shown by Loeffler's earliest researches pure cultures of this bacillus induce characteristic diphtheritic inflammation when inoculated into the mucous membrane of certain lower animals," notably rabbits and guinea pigs. This statement is being daily demonstrated in our laboratories and needs no comment.

It was not long after the discovery of the specific infecting agent of diphtheria that it became a matter of almost daily occurrence to find this bacillus in throats whose clinical appearance was not that of diphtheria, and further its absence was noted in cases that presented the typical diphtheritic pseudo-membrane. The former class showed us beyond a doubt that mild cases of diphtheria are common, and probably have not been recognized as such in the past; while the latter cases raised a reasonable doubt in our minds as to the dependence to be placed in this new method of diagnosis. But continued study of the micro-organisms found in these various affections of the throat has given us the following resumé of the etiology of diphtheritic and pseudo-diphtheritic inflammations: the mouths of most people always contain a variety of micro-organisms, two of the most common being the streptococcus, and the staphylococcus Pyogenes Aureus. Under favorable conditions either one or both of these germs become greatly increased in number, and infecting the mucous membrane at some point, produce the condition of inflammation, varying in degree from one of simple congestion to that of the clinical appearance of diphtheria. Pure cultures of streptococci are commonly found in this latter class of non-diphtheritic cases, and they are usually milder and not as contagious as cases due to the Klebs-Loeffler bacillus. Occasionally, however, the septic condition is very severe, and is often so when complicated by scarlet fever or measles.<sup>1</sup> These cases should always be isolated, and treated as mildly infectious affections. Mixed infections of some of the

<sup>1</sup> Manual of Bacteriology. Sternberg.

pyogenic bacteria with the Klebs-Loeffler bacilli are not uncommon, and are not to be lightly regarded.

Infection by the Klebs-Loeffler bacilli may produce almost no signs or symptoms, these cases being of very short duration, the non-susceptibility of the patient accounting for the lack of disturbance. Such cases are to be regarded as sources of danger, and persons in charge of diphtheria cases whose throats may temporarily show these bacilli are also to be so regarded.<sup>1</sup> Daily bacteriological examinations are to be made in all doubtful cases until the diagnosis is clear. It may be mentioned here that patients convalescent from diphtheria are to be regarded as sources of danger as long as Klebs-Loeffler bacilli are found to be present by bacteriological examination; and they have been found in such cases from a few days to three months after the disappearance of all membrane.

The cases which have been brought up to disprove the reliability of the Klebs-Loeffler bacillus as the sole infecting agent in diphtheria may be explained in part by the fact that we frequently meet with a bacillus resembling the Klebs-Loeffler, but constantly differing from it, apparently having no connection with diphtheria and being non-virulent.

In this very brief presentation of so important a subject as the diagnosis of diphtheria, I wish to emphasize very forcibly the advantage not for the purposes of treatment or prognosis, but for diagnosis alone, of the early bacteriological examination of all suspicious cases. The very careful and painstaking attention which the boards of health of the large cities are officially giving this very matter, bears testimony to the great importance in which it is held by the leaders in medical thought in the country.

<sup>1</sup> *New York Medical Record*, March 25, 1895.

# CONSERVATISM IN MEDICINE AND SURGERY.

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BY GRANVILLE P. CONN, M. D., CONCORD, N. H.

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It is often interesting as well as instructive to take a retrospective glance over conditions that apparently have taken the lead in shaping popular opinion.

In professional work this is quite as fascinating as it is to follow the ordinary topics of the day. In the present, matters that are non-sensational are relegated to the background, giving place to topics that can be made to excite the imagination, and help to create a sensation. Out of this has been developed the fad of being interviewed by a representative of the public press, in which many times the person being interviewed is shrewdly made to say what the publishers of the paper or journal believe will be graciously received by its patrons. This seems to have extended to all classes of society until it has become a profession. The ward politician discourses eloquently on the financial problems of the day ; the would-be statesman is represented to have decided views upon questions involving international law ; ministers and lawyers do not hesitate to boldly proclaim to the world the necessary reforms to save the country ; (yet it is rare that any two agree upon the plan of its salvation) ; the physician and surgeon allow professional work of the most sacred character to be heralded through the columns of the daily press as a consequence of reporters being present at operations, or of bulletins being issued daily, describing the physical symptoms of some prominent patient.

In either case, by using the clinical phraseology of the surgeon or physician in charge, the language may be made so effusive as to leave the reader in doubt whether it is intended for the

purposes of stock exchange, or for complimentary allusions of a mutual admiration society.

These professional fads have been developed from time to time, and it has always been the province of rational medicine (which is only another name for state medicine,) to assist in showing up what is fallacious and promoting the growth of what is good. State or preventive medicine is doing the same to-day, and to meet these questions successfully must adhere strictly to the truth, or to what can be satisfactorily demonstrated without recourse to what may be justly denominated imagination and theory.

These conditions have been developing rapidly during the past decade. Conservatism seems to have been lost in the desire to bring before the public matters that would allow a greater range of the sensational, and solid facts have been made to give place to results that have been illusory in their character.

In our professional work, preventive medicine may not seem so brilliant as surgery, nor so seductive to the general practitioner as the administration of drugs, yet the fact that a life may be saved without the intervention of either the knife or a drug, is a most gratifying result to the average human being. The advanced position that surgery has taken since the close of the late war, has been almost directly and entirely along the lines of hygiene. The army surgeon was often-times brought in contact with much that was suggestive, and with the broad and brilliant mental capacity which he must necessarily have in order to succeed, saw much appear that he would wish to improve. The unfortunate surroundings, the unhygienic condition of the person, the immense amount of practical surgery that must be done in a short period, and that under the most depressing conditions and without adequate supplies, all tended to awaken in the mind of the thoughtful physician and surgeon the idea that something was needed to complete a good work, and make success the rule rather than the exception. In this long struggle from '61 to '65, it did not take but little time to educate the surgeon to the fact that cleanliness was the foundation stone on which rested the art of surgery. As a result, Listerism, Pasteurism, and various other "isms" began to assume vast proportions soon after the war closed. Like a

great many other things, it was considered so commonplace to be clean that it was overlooked, and, therefore, when brought into prominence, the pendulum swung to the other extreme, and a variety of terms were used to express the hygienic conditions imposed.

I well remember, about '71 to '72, of attending a meeting of the Connecticut River Valley Association, at Bellows Falls, and meeting Dr. H. D. Holton, of Brattleborough, who had arrived home within a week from a long visit in England, where he had passed considerable time in the hospitals. He came back imbued with the idea that Listerism was the all-important adjunct to surgery. In somewhat lengthy, impromptu remarks before that association, he went into the details of the work as performed by Mr. Lister, and dwelt particularly upon the fact that all the operations were performed under spray. He was particularly emphatic in that particular factor as having such wonderfully good effects whenever an operation was being performed, and especially in abdominal surgery.

I remember very well that at the close of his remarks, the late Professor Phelps, of Dartmouth College, who was sitting very near, and who gave him undivided attention during his whole discourse, rose up and taking him by the hand said, "Brother Holton, you have got it bad, but thank God, it isn't a fatal disease. Listerism is having its day, but we shall all live to see that it is simply a matter of keeping the patient clean." Professor Phelps has passed away. Dr. Holton is still doing good work, and is not obliged to use the spray in order to keep his patient clean.

It is unnecessary to remark that surgery has made most wonderful strides within a few years, and we naturally ask the reason for this great advance. We are told that it is due to the practical use of asepsis. Now the term "aseptic" does not mean nearly as much to me as does the good old Anglo-Saxon phrase of "being clean."

The terms sepsis, antisepsis, disinfectant, disinfection, and a host of other such phrases have been sprung upon the profession by the chemist and the pharmacist who have had something to sell, and consequently were always ready to assist the most conservative members of the profession in keeping up with the

times, by loading them down with various compounds, labeled with unpronounceable names. These chemical compounds may have their use, and at certain times may have some influence in overcoming what would otherwise be septic, but to my mind true cleanliness which can be brought about with soap and water and a scrubbing brush, is necessary before we place our faith in any of these compounds.

In the hygienic conditions involving a surgical operation or a surgical dressing, we should always demand true innocence instead of repentance, for repentance of the evils done in this world does not benefit the victim of a polluted water supply, contamination of food, nor of the consequence of preventable septic poison. Good may come to others from such teachings, but to the friends of the victim a life is sacrificed to ignorance or stupidity, for it might have been different had there been proper care exercised.

A few weeks since, under the head of "Up-to-Date in Surgery," the *British Medical Journal*, published in London, said, in a rather sarcastic way, "Modern surgery is heroic enough to please the grim prophet of hero worship. It seems to have taken Danton's motto, which in English would be rendered, 'audacity, audacity, and still more audacity.'" This calls to mind the language of that most estimable wife of our distinguished compeer, Dr. John G. Blake of Boston, who, while travelling through the mountain passes and canons of Colorado and New Mexico, and asked her impression of the scenery, replied, "I do n't know which to admire the most,—the royal grandeur of nature, or the audacity of man as exhibited in the extraordinary feats of engineering skill." So, with the surgical work of to-day, we are sometimes at a loss to describe our feelings, as to which we admire the most, the physical beauty of God's creation, or the audacity of man in his defense of the physical body against disease.

Continuing the quotation from the *British Medical Journal* the writer says: "Almost every week one hears of some surgical Alexander cutting his way to fresh conquests. It is not unnatural, therefore, that nearly every ambitious surgeon should see in the knife his '*in hoc signo vinces*.' In the hands of a skillful operator the knife doubtless can work greater wonders

than the fabled wand of the magician, but it should be reserved for difficulties worthy of so noble a weapon. As Falstaff says of the English nation, it may be said that it was always the trick of our profession, if they have a good thing, to make it too common. We cannot help thinking that the knife is made just a trifle too common. . . . ."

Again he says: "This is quite in the spirit of 'advanced' surgery, which, in the words of one of its chief professors, thinks no more of opening a patient's abdomen than a man does of putting his hand into his pocket. Is the day coming when a cold in the nose will be dealt with by Rouge's operation, and bronchitis treated 'on surgical principles' after preliminary opening of the windpipe ?"

This is strong language, and yet to some extent it is worthy of our consideration, as at the present time there is a great predisposition for some people to become wedded to fads, and just now, surgery, especially that of the abdominal and cranial cavities, seems to take the lead in the profession. With the improvement and advancement made in the hygiene of such work, the opening of these cavities has become nearly, or quite, without any expectation of harmful results. It is a matter of congratulation that every member of the profession should be allowed to have the ambition to go forward and perform all manner of operations ; yet, on second thought, we must admit that only a comparatively few in a sparsely settled country can become experts. Continued and daily practice becomes a necessity for good work, especially where delicacy of touch and manipulation is required. The same is true in regard to the hygiene of an operation in order to prevent contamination or sepsis. It appears to me sometimes that we are prone to give our attention almost entirely to the opening of cavities, especially so far as the prevention of sepsis. Our books and our journals of how to prevent sepsis are full of instructions, especially in the opening of the cranial and abdominal cavities, and while they give you some general instructions regarding the minor operations, yet they are comparatively silent on such matters as are of daily occurrence to the profession at large.

It is only very recently that I have observed in text-books or

in journals any allusion whatever to the preparation of a patient for so simple an operation as vaccination, as it is generally understood that everybody must know how to vaccinate. In fact, it has become so common that the laity themselves think they can do it just as well as physicians, and all of us have had experience with that class of people. I believe the time is coming when by the use of preventive measures the operation for vaccination will be made one of importance, in which the arm, clothing, and the surroundings will be made as nearly perfectly clean as it is possible. I have remarked to medical men and others that if we would approach a child who was to be vaccinated and prepare the arm and the clothing and all the surroundings with the same care that we would if we were going to open the abdominal cavity we should have far less trouble; there would be far less complaint of sore arms, and the possibility of other troubles aside from the vaccine virus taking hold of the system of the patient. It is not my purpose to speak particularly of medicine or those auxiliaries of surgery beyond that of preventive means relative to surgical operations. I have great respect for the pharmacist who has been of value to the profession in bringing certain things to our notice, but I object to his assuming that we cannot get along without him. The truth is, this work of advancement was begun and was made possible by our professional knowledge of hygiene. For some years before 1861 there had been but little advancement in surgery, which to that period was almost entirely confined to the extremities. Suppuration was the rule, and although the text-books taught that we might get union by first intention, yet they signally failed to teach us how it could be achieved. A good story is told of a surgeon and house officer of the period of 1870, and the same again in 1894, which runs as follows:

In the year of our Lord, A. D. 1870. SCENE: Surgical ward.

SURGEON: How is Jones doing?

HOUSE SURGEON: Extremely well, sir; the wound is suppurating nicely.

SURGEON: That's all right.

TIME: In the year of our Lord, A. D. 1894. SCENE: Same surgical ward:

SURGEON: How is that amputation of the breast?

HOUSE SURGEON: I'm sorry to say, sir, the wound is suppurating.

SURGEON: What! Suppurating!!! Do you say suppurating? Well I'll be —

It is true that McDowell and some others had opened the abdominal cavity, but in doing this wonderful operation they had brought down upon their heads the scorn and the abuse of the majority of the profession, for they had utterly failed to give any reason why such operations could be safely performed. While hygiene was known to be as old as the world itself, its simplicity was so universal that it had fallen from its high estate and had become one of the lost arts. It is to be remembered that in Holy Writ we find in the law of Moses much that pertains to hygiene and sanitation, and I sometimes wonder if it is because we find those matters in the Bible that so few seem to know that they ever existed. But whenever we look this matter over and come down to vital principle we are always confronted with the same thing, viz., that cleanliness is the foundation stone of all good surgical work. No matter how much we may have of carbolic acid and various other drugs and chemicals which are put upon the market and advertised largely, without cleanliness, without soap and water and the scrubbing brush, we shall utterly fail to do good work. These are the hygienic measures on which surgery depends, and without which surgery would soon fall back to the low estate which it had prior to 1860. The most of the compounds which are placed upon the market are empirical in their character, and cost all out of proportion to the good work which they may be expected to perform. I am always suspicious of any man or physician who indulges in rhapsodies over some new medicine or compound. We should look out for him. He will bear watching carefully, for he may be but an advance agent, and talking for the money in it, the same as the advance agent of a circus, or any other advertising agent. Many drugs and surgical supplies are advertised in our medical journals in which we have no confidence, and while there may be members in the profession who use them, yet it is generally expected that the public will purchase, rather than the profession. The advertising which some of these compounds

get is simply ridiculous, and should not be tolerated by any member of the profession, or even any person of common sense.

The following item regarding a wonderful medicine is taken from the *New Idea*, and is presented you as an illustration of an extravagance in language that none but a mountebank or charlatan would assume, and yet it is only in a line with the exalted conditions the commercial traveller, representing manufacturing firms, would have us believe, and should we venture to express doubts regarding the infallibility of their compounds being as efficacious as their expression of confidence would lead one to expect, they seem pained at our ignorance, and sometimes actually intimate or insinuate that you are but a back number. The item was as follows :

Chetterback's Balsam of Balsams. Nature's Palladium. Should you chance to have your brains knocked out, or your head chopped off, two drops of this seasonably applied will recall the fleeting spirit; re-enthrone the deposed arch; cement the discontinuity of the parts, and in six minutes' time restore the lifeless trunk to all its pristine functions, vital, rational, and animal.

To which an editor comments as follows :

A full bottle of this will also make a sausage wag its tail and bark, and a jar of extract of beef bellow or give milk.

Barnum once made the remark that the public loved to be humbugged, and the suggestion has been acted upon by the maker and vender of patent medicine for many years.

Fortunes have been made, human beings have been drugged, and the constitution of future generations has been impaired, until the philanthropist and the reformer should at least class this evil with that of intemperance.

It is not strange that the manufacturer of pharmaceutical preparations and surgical supplies, in the sharp competition of business, should fall into the same line, and shrewdly making use of the profession to bring out his products, be able to build up large business plants, and from his profits rival the dealer in patent medicines, in the elegance of his mansions. The physician and surgeon should always think for himself. The profession should direct public opinion on all matters of professional

interest, instead of having it brought round in the grip of a commercial traveller. The surgeon should never confidently allow the use of some compound of which he is not thoroughly informed of its chemical constituents. We know that absolute cleanliness, with abundance of dressing made absolutely aseptic by the great cleansing power of heat, will prevent infection from without, and give our patient every chance from the possibility of auto-infection from within.

One other matter I would like to bring to your notice. It is true it has not thus far been intruded upon the surgeon to the extent that it has been upon the physician, but I anticipate that ere long some bold disciple of the commercial travellers' union will come round to our office with a gripsack full of samples, for the relief and cure of such a variety of surgical diseases, "that," using his own language, "no reputable surgeon would ever be without a large stock ready for immediate use." The following from the pen of one of our profession, ever ready to meet imposition in every form with ridicule and pungent wit, will serve to invite serious thought and investigation into a class of remedies that is being heralded to the world with all the blazing effrontery of empiricism. I give it to you as only a partial list of extracts:

" An extract of muscle for rheumatic pains.  
A gray-matter extract to nourish our brains.  
An extract of teeth for a man that can't chaw.  
A maxillary extract to cure lock-jaw.  
An extract of ocean to cure mal de mér.  
A hirsutic extract for those without hair.  
A duodenal extract to serve in good turn  
In healing the ulcers that follow a burn.  
An extract made out of a whole population,  
To rescue some housewife from sterilization."

Medical journals wielding considerable influence in the profession, unblushingly open their advertising pages and with sensational head lines intimate that any one who reads can be raised from the depths of despondency, if they will only send for these specifics. To the reflecting mind it seems as if any educated person would at once distrust such dogmatic assertions, yet in the present it is becoming a fad to follow the bacteriologist and the biologist through the devious pathways of

the laboratory and accept the diagnosis of the culture tube without question.

True scientific investigation and its deductions should be the admiration of every member of the profession, but do not be in such hot haste to accept conclusions as to overthrow and trample upon common sense opinions as have been set forth by state medicine, as well as the axioms and aphorisms of the science and art of medicine and surgery that have been in the past and must be in the future, beacon lights to guide professional opinion, thereby avoiding the dangerous shoals of dogmatic assertion and empirical insinuation.

The bacteriologist and biologist are doing good work, but many of those performing the most labor in this department are not practical physicians and surgeons, and therefore do not test the results of their own study. Should such students become enthusiastic and fascinated over the secret processes revealed through the culture tube and the microscope, will it be always safe to follow in their lead without something more than theoretical assurance? I have great respect for newspapers and medical journals, as well as for the enterprising men who serve as the medium of communication between the people of different sections of the world, yet they often-times defeat a good object by prematurely bringing before the public the work of the scientist. Less haste and more conservatism would develop less fads but more real science. The sensational might be far less prominent, but real worth would be a solace to the profession.

A summary of this paper may be concisely stated :

Always investigate for yourself. Do not allow "isms" nor fads to become a part of your daily prescriptions. Hold fast to that which is good, and promptly discard all that will not bear a searching scientific investigation, under a light as strong as the noonday sun.

And lastly, with a thorough knowledge of hygiene, therefore fully realizing the powerful influence of state medicine in counteracting the deleterious effects of fads and theories that are but a figment of the imagination (fostered by minds already dazed by an all-absorbing desire for pecuniary gain) we should not forget that in surgery we have in absolute cleanliness the true foundation of practical success.

DR. C. R. WALKER.—*Mr. President:* I have always believed in medical and surgical conservatism, partly from conviction perhaps, and partly because from natural causes I belong to that great middle class (if I may apply such a term to our profession) who never stray far from well-tried methods of treatment.

Leaders in medicine or military affairs—at the head of a six-horse team, or piloting a prairie schooner across the great American desert—all are born not made.

Thoughtful, and also stupid, men, advance ideas that are soon proved true or false by the chain and pole horses of the medical world, struggling with the load of actual disease over roads obstructed by countless obstacles, peculiar to each individual cause, and unrecognized perhaps, at least undervalued by our enthusiastic leader.

If we are so far conservative that we dare at times confess our inability to make an immediate diagnosis, but yet insist that a case may prove to be contagious, and hence quarantine a house for the possible good it may do the neighborhood, then do we not accomplish something if our suspicions prove correct?

Conservatism is the principle that should apply to the treatment of all diseases in their early stages.

One idea occurred to me as I listened to Dr. Conn's paper—and it was this—Why the coming woman, the so-called new woman of the future, had not claimed for her sex a priority to the discovery of all that was valuable in our treatment of surgical cases to-day.

From before the days of Esculapius the busy housewife, the world over, with boiled water has cleansed her household utensils—preserved her fruit—kept things sweet—or in our vernacular, aseptic.

That is really the foundation, the germ of all surgical work of the present day—cleanliness—an idea due to the natural conservatism of men, who were not carried away by Listerism.

In so-called special work let us be conservative, and not attempt, perhaps to the detriment of our patient, to do with limited knowledge and armamentarium, what our distinguished guest, Dr. Douglas, might easily, from his long experience, do in diseases of the throat.

DR. CHILD.—I am exceedingly gratified with this paper for several reasons: First, because it is true, and second, because I have been pretty sharply criticised in regard to this very point. It seems to me that the sum and substance was stated well by Dr. Conn in this: Cleanliness; and I think if you will look back in some of my old papers you will find that same expression, and to-day it is the whole matter in my opinion. It is of but little consequence how you gain that cleanliness. I could give you cases of surgery that, before I ever heard of Listerism, I performed. We didn't have carbolic acid (I mean to use in this way) and no mercurial preparations. I simply washed, and thoroughly washed; and then, I used alcohol thoroughly as an application to those wounds, and did not have a particle of pus. I agree with you in this, that some form of chemical may be just as good as soap, but soap is cheap and it is good, and whether we accomplish it in that way, or in a different way, we do accomplish the end, cleanliness. I do not see why that is not all there is about it. The truth is, we are expecting too much, or too little, of natural recovery. We think we know it all just now. I have distinctly in mind a time when I saw Dr. Dixi Crosby amputate a limb in that old pest hole that had more germs in it than you could put in this room. He said hot water was the thing he was going to dress that stump with; and he did; and he kept it open and continued the application of hot water until he produced a glazed condition as he called it. I do not know why Dr. Crosby should not have the benefit of that as well as Lister, or Pasteur, or any of those men. We have had at Dartmouth College in such men as Peaslee, Crosby, and Phelps, men who if they could have lived now, would have been in advance because they would have used their common sense. We do not use our common sense all the time. We have enough of it, but we do not always use it. However Pasteur, Lister, and others have demonstrated and rendered a scientific reason for absolute cleanliness in surgery without pus.

DR. CONN, in closing the discussion, said he was much pleased to receive the commendation and support of two such distinguished members of the profession, and that he believed the fad to make a record in abdominal and cranial surgery was

already on the wane ; that he had no desire nor disposition to retard the progressive spirit of surgical triumph, but believed it was a good thing to retain a certain amount of conservatism, in both medicine and surgery. Else the profession would be in danger of becoming so wise in self-conceit that it might criticise the wonderful work of the Creation, and favor surgical interference so early in life as to seriously handicap the great problem of life.

# CONGENITAL IMBECILITY AND ITS CAUSATION.

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BY EDWARD FRENCH, M. D., NEW HAMPSHIRE ASYLUM, CONCORD, N. H.

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The fact is evident that all communities contain imbeciles. It is equally evident that in some cases at early ages—say from thirty-five to sixty years—their mental enfeeblement takes on a sudden activity. It may be an exacerbation of maniacal excitement or some other mental morbid manifestation different from the usual condition of imbecility peculiar to the individual in question. This comes from inherent causes and is generally inexplicable on any other grounds. The records of any hospital for the insane will show case after case in which the patient is set down as congenitally deficient and the cause given for bringing the patient was a sudden exaggeration of natural traits or an active insanity which came on without external causes.

The term *congenital imbecility* is applied to a condition of mental enfeeblement, commencing at birth or soon after, ranging from below the normal to the state of idiocy.

Such cases are so numerous in every American community and so liable to become charges of the general practitioner it has become a peculiar issue in our complex civilization, and the family doctor is often called upon for advice in some emergency. They are social problems which families and society are constantly dealing with, and often cause much anxiety and trouble.

I believe that in his ordinary environment, the imbecile runs along in his usual manner, or in the one that is normal to himself, but when he reaches that age where physiological waste exceeds repair he suddenly changes. He may become insane by an exacerbation of maniacal excitement or of depression, or he may develop epilepsy or a morbid craving for alcohol or some drugs.

From having been feeble workers or non-producers they suddenly become a menace to the community. Such persons may be detrimental all their lives by reason of a lack of moral principle or of will to control their impulses and appetites. They are the "firebugs," the Jesse Pomeroy's, a large part of the juvenile delinquents in industrial schools and reformatories, and are notorious for making assaults in fits of ungovernable rage when they have been provoked. The degree of mental enfeeblement varies considerably. In one extreme there is the example where the special senses lack development and the body shares with the mind in imperfections; speech is generally defective either through physical malformation or from involvement of the centres of speech and word memory. At the other extreme is the person who is *peculiar* with mental enfeeblement in some directions but abnormally proficient in a single one direction. Among these are numerous examples of proficiency in a single line amounting almost to genius. The sensational, hysterical, notoriety-craving people who are always doing some peculiar or outrageous act, to attract public attention, are, according to Max Nordau, of this class. Lombroso thinks this class competent only along an artistic line, such as music, painting, sculpture, poetry, etc., and points out that scientists, inventors, civil engineers, and men who deal with the purely tangible and material things are always of full mind and never show an instance of even average success in an imbecile or degenerate. It is this class that become suddenly worse without any adequate external cause, and are then consigned to public institutions for care. Sometimes there is but an exaggeration of single faculties or traits which become so prominent and imperious as to control the individual and to constitute active insanity. As I said before, they are social problems, and every decade makes the solving of them more imperative. The police courts are constantly dealing with offenders whose mental development is questionable, and because of the necessity to protect society from a repetition of the offence they are consigned to jails and prisons. This phase I am not to discuss, but a nearer one, one that involves the general practitioner and the mental specialist.

Galton, in his law of retrogression, says,—“The child is cer-

tain to reproduce not only some of the qualities of its father and mother but also of its remote ancestors." And also, "we appear to be built up severally, out of a host of minute particles, of whose nature we know nothing, any one of which may be derived from any one progenitor, but which are usually transmitted in aggregates, considerable groups being derived from the same progenitor." This accounts for atavism and probably some cases of mental enfeeblement are but reproductions of a remote ancestor who perhaps in *his* time was of the average standard in his class. It is the opinion of Dr. Beach that fully two thirds of all the imbeciles are due to congenital causes inherent in the ancestry. All other cases are due to various traumatic agencies, acute physical illnesses that are productive of malnutrition of the cerebrum, and other acquired conditions.

The classification of Dr. Fletcher Beach is perhaps the best and most comprehensive, because it is founded upon the etiology of this condition. As yet no classification of cases according to the degree of enfeeblement has been made, although, if it were possible, it would be more desirable than the existing ones.

Drs. Beach and Shuttleworth in an article in "The Dictionary of Psychological Medicine" give the following facts, which have in some instances been modified by American statistical information. The classification used is, I believe, Dr. Beach's:

- (1) Those causes acting before birth.
- (2) Those acting at birth.
- (3) Those acting subsequently to birth.

The first class comprises more cases than both the others, because heredity is the largest factor in causation. Heredity is so well defined by Morel, who is only second to Lombroso in the study of congenital deficiency, that I quote his meaning of "heredity" in this connection. He says,—"We do not exclusively mean by heredity the very complaint of the fathers transmitted to the children with the very identical symptoms, both mental and moral, observed in the progenitors. By the term heredity we understand the transmission of organic dispositions from parents to children." Insanity, epilepsy, paralysis, and other less important neuroses, with consanguinity of parents, syphilis, alcoholism, tubercular disease, and acute diseases of the

mother during gestation, are important factors operating before birth. Others equally important are, advanced age in one or both parents, exhausted procreative powers, twin birth and lack of nourishment for the mother while carrying the child. While in many cases it is possible to account for mental enfeeblement in an existing condition either permanent or temporary in the parents, yet it is probable that most cases are caused by a number of forces acting together. Most of the following facts have been taken from English statistics. As a combination, insanity and epilepsy, that is, one parent was insane and the other an epileptic, has produced the largest number of imbeciles. Of three causes, a history of insanity, epilepsy, and imbecility has been the worst. Of any single cause, a history of phthisis has produced more cases than any other. This was to be expected, for phthisis has long been known to be interchangeable with insanity. In the English schools for feeble-minded youth, the reformatories, and the hospitals for the insane, from 22 to 28 per cent. of the imbeciles are believed to have an ancestry with phthisical history. From 15 to 21 per cent. were children of insane parents. Epilepsy in the parents with other neuroses, such as hysteria, deaf mutism, nervous diseases, and paralysis furnish about eight per cent. and become interesting as showing the effect of some hereditary taint in the parents changed to an entirely different disease in the offspring. Dr. Kerwin, of Pennsylvania, believes that intemperance in the parents caused 38 per cent. of the imbeciles in the "Institute for Feeble Minded Children." The English statistics furnished by Drs. Beach, Down, and Shuttleworth are considerably less. Syphilis is credited with about two per cent. Consanguineous marriages are responsible for about two per cent. One of the most prolific causes is the morbid condition of the mother, both mentally and physically, during gestation. The advanced age of the father or the mother is sometimes a cause, especially where the mother has borne many children. Emotional states, such as anger, or intense conditions of other passions in the father during the procreative act, furnish direct testimony of being the cause of mental enfeeblement in the offspring. As long as our laws offer no impediment to marriage even in cases notoriously unfit to produce children, medical men can only advise and

society must bear the result, as it should, because it looks upon such unions with indifference or complacency.

In class (2), Causes acting at birth, compression of the head is the most prolific cause. Next to this is premature birth and prolonged parturition. In America, previous attempts at abortion have been believed to have had a bad effect upon the child *in utero* and to have caused the subsequent mental enfeeblement. Such cases show physical weaknesses and deformities with the special senses often impaired.

The statistics. Protracted pressure from long parturition where instrumental delivery is not practised give between 17 and 30 per cent. This causes asphyxia and paralysis of limbs afterwards becoming subject to convulsions, and with several other nervous complications. In such cases where the head has been considerably compressed and when death has soon resulted, meningeal hemorrhages are frequent and generally found on the cortex on its topmost aspect. There has even been laceration of the cortex and where such cases have lived for some time afterwards, and died from convulsions, atrophy of the convolutions in this same region has been found. The moral to be drawn from this class is, to prevent prolonged parturition, for, as a cause, it is double all others in this class.

Class (3), those acting after birth, is most easily determined of all, and hence of more practical interest to the practitioner. Dr. Down has made a similar point, regarding this class, to the one mentioned in the first part of this paper. He says,—“There are some cases in which an innate tendency to brain defect may remain dormant until a later period of life, such as puberty or the second coming of teeth, when imbecility becomes apparent.” He calls this “developmental imbecility.” Infantile convulsions account for from 18 to 33 per cent. of the imbeciles found in this class; but here a doubt creeps in. Is it certain that the convulsions are the primary cause? Is it not probable that the convulsions and the subsequent mental enfeeblement are the parallel effects of a primary brain lesion? Epilepsy and other cerebral diseases give 10 per cent., a percentage which seems quite small compared with those ascribed to less common diseases. Acute febrile illnesses, such as scarlatina, measles, diphtheria, small-pox, continued fevers, and whooping cough, are

said to directly influence brain nutrition and ultimately cause atrophy of the cortical convolutions. Several American writers think these several diseases of much more importance than the statistics of five or six per cent. would seem to show. Traumatic injuries and mental shocks, like fright, sunstroke, starvation, and excesses, give about three per cent.

DR. S. N. WELCH, of Sutton.—There was one point brought out in that paper that I would like a little light on. As I look over this audience, I could undoubtedly divide them right in the middle. On one side they would believe in the old adage that "meddlesome midwifery is" bad; on the other side and here would be those equally skilful who would believe that instruments should be used as the politicians say we should vote, "early and often." I believe that the instruments have been used a great deal more than was necessary, and I think many times more than was for the benefit not only of the child but of the mother, and one idea that he brought out was this: that in difficult labors where there was continual pressure brought to bear upon the cranium of the child, that of itself might produce certain lesions that would result in semi-idiocy. How are we to determine how long we shall wait for nature to perform her functions? How are we to determine when and where to use the instruments? Perhaps in my practice in the last twenty years I have been guilty of allowing what would have been an otherwise bright child to become a semi-idiot, because I waited for nature to do the work that I ought to have done. If I have, I want to be set right in it. I want to do that which is best for me, my patient, and all concerned, and if there is a case of prolonged labor where the compression of the child in passing through the pelvis must be continuous for a length of time, is it better, taking it in the light of that paper, to apply your instruments, make forcible delivery, than to allow nature to work out her own salvation? There is a point I would like Dr. French to explain. I rise simply for information, "only that and nothing more." I do not know but I am wrong, but I will simply say that in twenty years in my obstetrical practice I have not used the instruments twenty times, and yet have had

the usual amount of such practice for a back town, and have waited many times where I know others would certainly have used instruments, when I have been advised by others to do so, and have declined to, and have yet to see any reasons for regretting my conservative treatment.

DR. STACKPOLE.—I am glad this subject has been brought before this society for discussion, for I desire more light upon it. The paper was well written, but the subject was an obstruse one. In no part of the human body is the diagnosis so obscure as the brain and nervous system. Our best medical authors do not pretend to give a definite diagnosis of brain diseases of hereditary character where structural lesions have taken place, for the manifestations are full of mystery. Pathologists have afforded but little aid; for with our present knowledge it is very little understood. About all that is known is symptoms during life. In congenital imbecility, I am quite in the dark, for I have no knowledge what occurs to the foetus *in utero*, but would like to get more light on the obscure subject. I know so little of this matter that I cannot discuss it with any profit, but would like to hear others who know more about it. It is by discussion that we get profit, new thought, more than by the reading of the papers. The members who come from different localities over the whole state, whose researches, observation, and experience must necessarily differ, make the discussions very interesting and give us new ideas, that tend to advance our knowledge in the profession. Since I have been engaged in the practice of medicine, which is more than fifty years, I have been present at the birth of about five thousand children. I am not aware that the children born by the aid of instruments are any more liable to imbecility than those of natural labor. I have used instruments many times, always when in my judgment it was necessary for the safety of the mother and child, and if used with care and skill neither will be injured.

Incipient functional insanity or imbecility is amenable to cure, but when it is of hereditary character, inborn, there is no hope of cure. Such cases may be benefited, but never permanently cured. The delicate mental balance is destroyed. Our asylums are noble institutions, a great improvement over

former times to ameliorate the condition of this unfortunate class by giving them comfort and proper treatment. I have often visited these hospitals, although sad to relate, yet interesting in a medical point of view, to observe the manifestations of the nervous system and brain when reason is dethroned. The most of the cases we find in the asylums are organic and therefore incurable. There is a striking resemblance in the symptoms of the organic and functional disturbance of the brain, which renders the diagnosis of the former quite difficult. When we cannot discover the etiology of a disease it is quite easy to make up a theory. I was hoping to hear this subject thoroughly discussed that we might get new thought and be quickened, but I fear that the whole matter is so obtruse, that you, like myself, know but little about it.

DR. FRENCH.—*Mr. President:* I think Dr. Welch is better to instruct *me* in obstetrical practice than I *him*. I can only repeat the fact that the statistics show that there is a direct chain. There is first the prolonged labor, the compression of the head; there is an autopsy in case of death; an internal hemorrhage is found. In similar cases where the child has lived and later has had the convulsions, there is usually found after death that there has been hemorrhage in the same cortical region to account for the mental enfeeblement. In the matter of instrumental delivery (I have forgotten the name, but at the same meeting of the association where Dr. Shuttleworth read the paper which contained these facts) there was a physician from Holland who claimed that instrumental delivery was the cause of enfeeblement of mind quite as much as prolonged labor. Dr. Shuttleworth and Langdon Down have been collecting statistics. They believe that in England there were only three per cent. of imbeciles caused by instrumental interference. There were some, of course. All practitioners are not judicious. Our American physicians are apparently more successful, for it is doubted by the specialists in this country that there is any considerable percentage caused by instrumental delivery. But Dr. Welch must go to another source for instruction in the use of the forceps. That I am not competent to give him.

## REPORT ON SURGERY.

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BY DR. J. FRANKLIN ROBINSON, OF MANCHESTER.

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*Fellows of the New Hampshire Medical Society:* I have chosen as the subject of this paper the Alexander operation for the shortening of the round ligaments as a cure in cases of chronic retroversion. I do not propose to give an elaborate treatise on the subject and will only report a few cases occurring in the Elliot Hospital at Manchester, N. H., the past winter and bring the subject before the Society for discussion. As a detailed account of the operation may be of interest I will quote the description as given in the *Annual of the Universal Medical Sciences*, issue of 1889, as follows:

"The pubic spine being accurately located, an oblique incision in the direction of the inguinal canal is made down to the spine, so as to almost nick the periosteum. The tip of the index finger immediately touches the spine, which remains the chief guide until the ligament is seized. Bleeding vessels are secured with catgut. The first deep incision has nicked the fibers of the inter-columnar fascia and through the slit protrudes a little knuckle of fat which should not be disturbed or lost sight of, as it indicates the location of the terminal fibers of the ligament. The pillars of the ring are laid bare by scraping with the handle of the scalpel and the whole mass of fat and connective tissue lying in the ring is gently lifted up and an aneurism needle passed under it close to the bone. The attachment to the pubic spine is not severed. This mass being seized with forceps or the fingers, gentle traction is made, and the fibers are seen to extend between the pillars of the ring, to which they appear attached. This attachment is slight and is loosened by sweeping the scalpel handle or finger around the

cord, the firm, round contour and glistening sheen of which show it plainly to be the round ligament."

Further on while speaking of the force required, the author says: "Gentle, steady traction will usually bring the ligament out, but sometimes the force required is quite great."

And now follows a point which it is necessary to remember: "It is important to separate the ligament from the accompanying nerve, which is about the size of No. 9 silk and which offers great resistance to traction."

Also, "The uterus being anteverted by the sound is held so until both ligaments have been drawn out equally from two to four inches, the fundus being held against the anterior abdominal wall."

Lastly, the round ligament is sutured to the pillars of the ring and the external wound closed.

Catheterization is necessary for several days at intervals varying from one to five hours, being more frequently required if there has been a previous cystitis. I have known a patient to suffer severely when not catheterized every hour, but such a case is the exception.

The first case that was operated upon was about forty-five years of age, had been subject to very severe neuralgic headaches and backaches for twelve years, at first occurring only at menstruation. These attacks gradually increased in frequency until the pain was constant and was of maximum intensity on every third or fourth day. During the last year she menstruated every two weeks, the flow hardly ceasing before it commenced again, causing extreme anaemia.

Uterus retroverted accompanied by severe metritis and general pelvic tenderness. The occasional use of morphine acted well for some time, but during the last year it has been used constantly. Under treatment the metritis was greatly relieved and the uterus anteverted and pessary applied.

She entered the Elliot Hospital in December last and submitted to the Alexander operation, the uterus being also dilated and curretted. The patient remained four weeks, returning to her home greatly relieved, the neuralgic attacks diminished in frequency and severity, menstrual period and flow normal, and her general health greatly improved.

The second case was about forty years of age. Has been troubled with metritis for twenty years, and with chronic cystitis of greater or less severity for twelve years.

Cervix badly lacerated and perineum ruptured; suffers intense pain in back and pelvis. Condition was growing steadily worse. Entered Elliot Hospital January last. The uterus was dilated and curretted, cervix and perineum repaired, urethra dilated, and the Alexander operation performed.

Owing to the chronic vesical irritation frequent catheterization was a necessity, being required every hour for a few days.

A labial abscess formed which discharged freely. The patient remained at the hospital four weeks and left it much improved, being able to retain her urine for three hours without discomfort, the pain in back and limbs was much diminished, and she was gaining rapidly in health and strength.

The third case was about twenty-two years of age. Had had pelvic trouble five years. Three weeks previous to admission to the hospital she fell on the ice, causing very severe pain in pelvis and lower back.

Examination showed retroversion of the uterus and general abdominal and pelvic tenderness. Was under treatment at her house until the acute inflammation was subdued. She then entered the Elliot Hospital for operation in January last. Uterus was dilated and curretted, cervix repaired, and the Alexander operation performed. Patient bore the operation well, but in three days an abscess formed in each abdominal wound. As soon as the stitches were removed and abscesses discharged freely, the case progressed favorably. Discharged in four weeks greatly improved, and a month after she said she was better than she had been for five years.

All these cases had been under treatment more or less constantly for years without permanent benefit, the congestion and flow of each menstrual period counteracting the effect of the treatment. Since the operation each one expresses herself as constantly improving in health and strength, and thankful that she had submitted to the operation.

The strictest antiseptic precautions were used, both in the preparation of the patient for the operation, while the patient

was on the table, and during convalescence. All instruments and dressings were sterilized before being used.

The pain occurring after the Alexander operation is severe, being caused by the unavoidable handling of the nerves so intimately associated with the round ligament. To relieve this hypodermatic injections of morphine or codia are required, the latter being considered preferable by some as it does not constipate. This severe pain may last a week or more and it may be several weeks before it entirely disappears. Patients also complain of a drawing sensation at the pubis, caused probably by the tension of the round ligaments. One of the patients above mentioned had severe attacks of hysteria simulating acute mania which morphine only controlled.

To promise instant and permanent relief from pain to a patient who has been a chronic invalid for years and a severe sufferer from neuralgia the most of that time, would be utterly absurd. Such a patient has acquired the neuralgic habit, if I may use that term, and although the original cause of the pain may be removed it will take some time for the nervous system to adjust itself to the changed condition. The neuralgic storms will occur but will diminish in frequency and severity as time goes on.

To expect the round ligaments to hold up the entire abdominal contents when the badly lacerated perineum gives no support is equally absurd. The perineum should be repaired as should also any considerable cervical laceration. If this be not done the round ligaments will stretch under the abnormal strain and the patient ultimately be in as bad condition as before.

One should not think of advising the Alexander operation if the uterus was fastened in retroversion by strong adhesions or pelvic infiltration until this state of things could be cleared up by local applications or some other method.

In suitable cases the Alexander operation offers a ready and safe means of restoring the uterus to its normal condition with a fair certainty of its remaining there permanently.

At no time during the operation is the abdominal cavity entered, thus avoiding the danger of peritonitis and lessening surgical shock.

All the above mentioned cases bore the operation perfectly.

I should never advise a patient to undergo abdominal section as a cure for retroversion if the conditions were such that as good results could be obtained by the Alexander operation.

The advantages of the former operation are slight when compared with the greater safety and excellent results following the Alexander.

**DR. D. S. ADAMS.**—*Mr. President and Gentlemen:* I hardly knew what I was to discuss until this morning, I received a copy of the paper, read it over hastily, and on my way up here made a note or two, and since I came in here a note or two more.

The Alexander operation, while I believe it is limited in its scope, still has its value. While it was performed probably a dozen times a few years ago to where it is performed once now, I believe it is doing more good to-day, having found its proper application, than it did at that time. As I understand, the Alexander operation is only applicable to cases where there is retro-position of the uterus with no adhesions, no disease of the uterus, no pelvic peritonitis, or inflammation, with a proper support from below, that is, a normal vagina, a normal perineum, a normal-sized uterus,—after all other means excepting section or celiotomy have been tried and failed. As you will readily perceive, this limits it to a very small scope. To attempt to hold the uterus up, as from prolapsus, by these ligaments, would be absurd. To attempt to hold it forward when there are adhesions with retroversion, or retroflexion, would be absurd. To attempt to hold up a uterus two or three times its normal size without other means of reducing the size, say a sub-involved uterus as the result of lacerated cervix, would be absurd. To attempt to hold up a uterus with a ruptured perineum, with prolapsed vagina, with endometritis, etc., without the operation for correcting the perineum and correcting the vagina, I think would be absurd. Still, we find cases where we have retroflexion with a very small uterus, and where apparently the vaginal wall, the perineum, etc., are intact, and where there are no adhesions, and where there is no disease of the pelvic cavity; and to these cases I think it is applicable, and I believe, as a primary and only operation, it is of great

benefit. I have a case at the present time under my care, where there is marked retroflexion, and still I am entirely unable to find any cause for it. It would seem to me that from some cause the uterus became tipped backward, and that the pressure immediately from above must have caught it and held it there until it has undoubtedly atrophied that portion of the uterus that is in the bend, and it is unable to support itself. Now, to a case of that kind, I think Alexander's operation will be of great benefit. I believe there is another field for Alexander's operation as a support to other operations. I believe it may be of benefit where we have retro-position with dilated vagina, ruptured perineum, and enlarged uterus. I believe if the other parts are corrected, if there is lacerated cervix, enlarged uterus, if the uterus is corrected, and the cervix is operated upon properly, that Alexander's operation may be added to it with benefit. I believe if there is a ruptured perineum with prolapsus of the posterior wall of the vagina, carrying the uterus down with it, that may be corrected, and the supports from below properly corrected, then that this may be added to them with much advantage. Now Alexander's operation is not without some drawbacks. There are some objections. First of all, it puts the uterus in an unnatural position, and fixes it there. It tips it forward onto the abdominal wall and bladder and fastens it there in an unnatural position. As we all know, the natural condition of the uterus is very movable. It is a very movable organ. It is susceptible of positions ranging from 40 to 60 degrees, and still when it is tipping back and forth it remains all right and natural. But this fixes it.

From this fixation we sometimes get irritation of the bladder and considerable disturbance. This was referred to in the paper. Another drawback is a dragging sensation that we get on the cords. I have seen one case, some two years and a half after operation, with a great deal of neuralgic pain from the dragging, as I attributed it, on the cords. The neuralgic pains followed the patient, and, in fact, the patient stated they had been very much more severe within a year or a year and a half than before the operation. I think I saw a report of one case of abortion as a result of this operation, pregnancy following not a great while after, and the patient aborted, and it was

attributed to the shortening of these cords. We find, however, that in a great many cases, after a year or two, the cords have stretched and let the uterus down again. I think a good many of the cases that have been followed have taken this course. Now as to the different methods of operating. I see by the paper there was only one described. It seems to me that there is no operation in surgery that has a greater variety of methods than this has. Some perform celiotomy, taking the cord in the abdominal cavity, doubling it upon itself, and putting a ligature around it on the side. Others make their abdominal section, bring the cords forward on to the uterus, and sew them down at that point. Others still, cut the entire canal to the internal ring, and make their fastening at this point. Recently one Western surgeon cut through the middle of the ring and sewed to each side of the canal. The most frequent operation is the operation described, tying to the external ring. The objection to tying to the external ring has been raised that hernia is liable to follow. In drawing the cord out we draw with it a cuff of peritoneum, and if pains are taken to sew the peritoneum and set up sufficient inflammation to form adhesion back to the internal ring I presume it would prevent hernia, still, I have seen a report where three per cent. have been followed with herniæ. That is one objection which is worthy of consideration. I have been told by some that their method of operating at the external ring prevents hernia, that they make a sort of pad that prevents hernia, but my observation is that hernia once started will find its way through if sufficient time is allowed.

DR. ROBINSON.—I acknowledge that the position of the uterus changes, but its average position is anteversion. The Alexander operation merely confines the uterus to the position it generally occupies. After a few days the patient can retain urine longer because the inflammation of the uterus has subsided. The ligaments will stretch in some cases, but why should there be any more danger of the uterus becoming retroverted after pregnancy following the Alexander operation than after pregnancy in a uterus which has never been displaced? Why should not the shortened ligaments retain the uterus in the position of anteversion? As a matter of fact they do, provided that there is a good perineal floor to support the uterus. You

cannot expect the round ligaments to hold up the whole abdominal contents. Too much has been expected of the operation. It was not claimed it could do that, but many operators have thought that the shortening of the ligaments would afford a sufficient support. Experience has proved that this is not so.

In its place the Alexander is a very useful operation and does not merit the condemnation that has been visited upon it. It should be applied with common sense. In Alexander's operation the peritoneal cavity is not entered. The other operations spoken of are not Alexander's. They are the operations of other surgeons and are called by their names. Hernia has followed in some cases after the operation, but the Alexander operation has been used as a cure for hernia.

# SOME OF THE USES OF STROPHANTHUS.

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BY DR. WADLEIGH, OF HOPKINTON.

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Strophanthus is by no means a new remedy—a memoir of its physiological action was presented to the French Academy of Sciences in 1865, thirty years ago. Dr. Fraser began to study it in 1869 but it was not until 1885 that he gave it a definite place in therapeutics as a heart tonic. The physiological action of strophanthus, generally speaking, may be said to be similar to that of digitalis but there are some points of difference. Unlike digitalis, it has very little if any power to contract the small blood vessels in the ordinary medicinal dose. As a diuretic, it is much more sure and certain than digitalis, acting probably on the Malpighian Tufts. The effect produced by strophanthus is almost immediate, though not so prolonged as that of digitalis and it almost never produces any unpleasant stomach symptoms, no matter how long administered.

This is a point of practical value, as it not unfrequently happens that the administration of digitalis has to be suspended, or even stopped entirely, on account of the derangement of the stomach, which is sometimes produced even by the smallest doses. In large doses it acts not only on the heart muscle itself but upon the entire muscular structures of the body. In poisonous doses it will cause nausea and vomiting, and acts as a depressant to the respiratory centres, and finally causes death, usually by asphyxia.

Clinically, strophanthus may be used with more or less benefit in all cases where digitalis is indicated, not that it will do as well in all cases but if digitalis has failed, or has had to be discontinued for any reason, we have in strophanthus a valuable substitute; but it is more especially in a few conditions in which digitalis is not so generally applicable that strophanthus finds its chief usefulness.

1. Among aged people, generally speaking, I have found strophanthus to give much better results in almost any condition where these remedies are indicated. In old age we often find an artheromatous condition of the arteries, and although digitalis may not be positively contraindicated, in all such cases it is very apt to do little good, and sometimes may even do harm.

2. In vertigo of aged people caused by cerebral anaemia, or by a lack of balance between the different parts of the circulation of the brain. This is something we find very little about in the books, and it is a condition in which I have been able to do much good with strophanthus.

3. In Angina pectoris. My experience with strophanthus in this disease has led me to believe that it will benefit a larger number of cases than any single remedy we possess.

4. In general anaemia and chlorosis when accompanied by weakness of the heart, as so often happens in these diseases, it not only gives great relief so far as the heart symptoms are concerned, but by sending more blood to the tissues increases their nutrition in this way. It is often an advantage to combine it with nitro-glycerine in anaemia.

5. In the so-called irritable heart characterized by palpitation on slight exertion, more or less pain in the region of the heart, often quite severe, weak, quick pulse, sometimes intermitting, but with no organic disease of the heart present. In this condition we may give strophanthus with almost an absolute certainty of deriving benefit from its use. This class of cases is quite numerous and I have yet to see the case which strophanthus will not benefit, and it will often cure them.

I have been using strophanthus now for about seven years and during that time have given it in a good many cases, and in fact I consider it one of the most useful tools we have. It is impossible to give a report of many cases because I have not kept a record of them, and many of them would be of but little value ; I will, however, mention two or three cases which may be of some slight interest.

CASE I. Mrs. C., fifty-six years old ; history of organic heart disease for several years previous. On being called to her I found the following conditions present : Very marked mitral regurgitation, considerable dilatation, anasarca of the lower

extremities to the knees, great dispnœa so that the patient was not able to lie down at all, more or less oedema of the lungs with incessant coughing. Prescribed digitalis, ten drops every two hours, one tenth grain of calomel every hour, with stimulants. Two days of this treatment produced very little or no results whatever. Convallaria was next tried, with no better result. Nitro-glycerine gave some temporary relief, but nothing permanent was really accomplished until strophanthus was used, the good effect of which was apparent almost immediately. In twenty-four hours she was able to resume the horizontal position, and the improvement was continuous from this time on, the anasarca mostly disappeared, excepting some slight swelling about the feet and ankles, and she was able to get about the house and attend to her household duties. At this time the remedy was discontinued and she soon returned to the same condition in which I first found her.

Strophanthus again administered with equally good result. She went through this same process three times and she then passed from under my care, and her next attack proved fatal. This was the first case in which I used strophanthus. The largest dose administered in this case was twelve drops, and I have never found it necessary to exceed this amount in my subsequent cases. I do not know why digitalis did not succeed in this case, or why so much greater benefit should be derived from strophanthus, as the conditions present would seem to point to digitalis as the remedy.

CASE II. Mr. K., age 86. History of temporary insanity some thirty years before. Found him in a general enfeebled condition and troubled with vertigo so that he was unable to walk without assistance; when he attempted to do so he would almost invariably fall. Began to give strophanthus and in two weeks he was able to walk without assistance.

This was supplemented by other treatment as occasion required. I made several attempts to discontinue the strophanthus but each time I did so I found him returning to his former condition. He took the remedy almost continuously for five years, until the time of his death. This case is of interest for two reasons: First, it illustrates the benefit which may be derived from the use of strophanthus in cerebral vertigo of old people, of which I have already spoken, and it also shows that it may be given for a long period without any unpleasant symptoms arising from its use. So far as I know, this is the only case which has been reported where strophanthus has been given continuously for so long a time.

CASE III. Angina pectoris. Male, forty-six years of age. Had been suffering from the disease about two years when he

first came under my care. Treatment five drops of tincture of strophanthus with two drops Fowler's Sol. three times a day. His attacks soon became less frequent and severe, and improvement continued as long as he used the remedy. He had been obliged to take one half grain of morphine two or three times a week for the relief of the paroxysms, but was soon able to discontinue this. In this case nitro-glycerine seemed to augment rather than relieve the severity of the paroxysms. He died of this disease last winter, some time after he had passed from under my observation. This is only one of several cases of angina, where I have given strophanthus and it has always given more or less relief with the exception of one case. This patient could not take it, for some reason, and it had to be given up.

The best preparation of strophanthus is the tincture prepared from the seeds. I have always used P. D. & Co.'s preparation, which is always reliable. The dose given is one to ten minims—it is rarely necessary to give it in larger doses than five drops, three or four times a day.

# THE ANTI-TOXIN TREATMENT OF DIPH-THERIA.

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BY C. P. FROST, M. D., HANOVER, N. H.

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In September, 1894, Dr. Roux of Paris read a paper at Buda Pesth on the treatment of diphtheria by the use of blood serum drawn from a horse that had been immunized to the poison of diphtheria by repeated injections of the toxin of diphtheria. Dr. Behring of Berlin early began to investigate the qualities of serum of animals immunized to the influence of various diseases. He announced his belief in its value in 1890. The honor of the discovery is the greater from the fact that it was no chance discovery but was the legitimate result of logical reasoning.

Dr. Roux, with the assistance of other physicians, pursued experiments from 1890, using serum for the treatment of diphtheria, at first on animals and later upon children. He delayed reporting his results till he could present evidence of the value of the discovery from its effects in a large number of cases.

## THEORY OF THE BLOOD SERUM TREATMENT.

Immunity from the action of a poison may be established in animals by giving repeated doses of the poison, which are not sufficient to cause death, but which may make the animal ill. In a varying time the immunity will be developed which will enable the animal to withstand, without bad effects, doses of the poison that would kill in normal condition. We all have knowledge of the tolerance that may be established in respect to opium by repeated doses. Also in respect to arsenic we have often heard of like tolerance of what would in the non-im-

munized person produce a fatal results. The poison produced by bacteria have an action in the body strikingly like the action of the poisons derived from plants. The poison produced in the blood by the action of the pathogenic bacteria is called a toxin. The bacterial poison being thrown into the blood of a healthy animal gradually develops a condition of the blood that acts as antidotal to the poison. This immunized blood then is believed to contain an anti-toxin or to be anti-toxic, and not only that, but to be able to develop immunity in another animal into which it may be introduced.

#### MANNER OF PRODUCING THE ANTI-TOXIN.

A healthy animal is chosen—preferably a horse—largely on account of his size and perhaps because he may be more readily found in a healthy condition and especially because he can stand a pretty large drain of blood serum. Into this horse is introduced a pure diphtheritic poison prepared by introducing into a vessel of sterile nutrient bouillon a pure culture of the bacilli of diphtheria. The vessel is then closed and kept at a suitable temperature for about four weeks. After that about 0.5 per cent. solution of carbolic acid is added. This kills the bacilli, which sink to the bottom. The clear supernatant fluid contains the diphtheritic poison in solution. This is injected under the skin of the horse. The dose must be large enough to make the horse quite ill without endangering its life. When he has recovered from this injection, another of increased strength is given. These injections are repeated two or three times a week in increasing strength, until in from one to four months complete immunity to the action of the poison is established. The test of the immunity developed is made in this way. It has been found that the guinea pig is especially sensitive to the poison of diphtheria. A definite amount of blood serum is mixed in a vessel with diphtheria poison of known strength in amount ten times as great as is necessary to kill a guinea pig in two days. The mixture is then injected subcutaneously into a guinea pig. If the animal shows no ill effects we know the anti-toxin to be present in the horse's blood in very considerable quantity. If, however, the guinea pig, while not dying in two days, nevertheless succumbs after a week, we know the anti-toxin to be pres-

ent in relatively small amount, and we may continue to administer to the horse the diphtheritic poison till a subsequent test shows the blood to contain anti-toxin in the proper amount.

When this condition is reached, a considerable, though not fatal, amount of blood is drawn from the horse into a sterile vessel and set aside in an ice chest. After the blood has clotted the clear serum is decanted off, 0.5 per cent. of carbolic acid is added to keep it from decomposing, and we have the heil-serum ready for use. In a cool, dark place the serum will keep for several months. This heil-serum, or healing serum, is quite powerful as compared with the immunizing serum. The heil-serum is to be used for the cure of developed cases, while a weaker serum is used to develop a brief immunity from the disease in such as may have been exposed to its influence. Inasmuch as it is well known that an attack of diphtheria confers no immunity against another attack, we cannot expect any results in the way of immunization by the serum to be of long duration.

The discussions in respect to the value of this treatment, both in Europe and America, have, upon the whole, been very favorable to its use. There are those who are with great difficulty convinced of its value. Others will doubtless claim too much for it. With the accumulated testimony of observers the world over, we may expect to reach reliable results very soon. In Germany we now have reports of cases observed from October 1, 1894, to April 1, 1895, numbering in all 10,312. Of these 5,833 were treated with the serum and 4,479 without. The proportion of death in the first group was 9.6 per cent., in the latter group 14.7 per cent. When the use of the serum was begun late, that is, after the second day, there was an average death rate of 16.9 per cent. In those cases when it was used early, that is, on first or second day of illness, the death rate was 4.2 per cent.

The size of the dose materially modifies the death rate. The larger doses give best results. This is of importance, inasmuch as no entirely relative standard for strength of the serum has yet been found.

The preparation of the serum should be regulated by law and its character should be vouched for by thoroughly compe-

tent persons. The high price of the serum as well as the great demand for it at present offers a great temptation to unscrupulous persons to put upon the market spurious goods. That the remedy should be of known strength, should be used early in the disease, should be used sufficiently to accomplish all that it is capable of doing, must be apparent to all. That it can be judged only by its effects in cases of true diphtheria, which in the early stages can only be surely made out by careful culture and microscopic tests, is now fully established. That it is not to be relied upon to the exclusion of former methods of treatment should be appreciated by everybody ; that it should be employed in every case of true diphtheria when a reliable serum can be obtained at the outset of the disease, is unquestionably true.

DR. SULLIVAN.—As regards the serum treatment of diphtheria, I have had a limited experience with Behring's preparation ; an experience that has caused me to think highly of anti-toxine in the treatment of diphtheria, and has caused me to feel assured that with it I have obtained better results than I ever have with other treatment. My experience is limited to seven cases. The first case should be excluded because the patient was practically moribund when the anti-toxine arrived. I had to telegraph to Boston for it. Of the other six, one was proved afterward not to have been diphtheria ; it was a suspicious throat, and rather than wait twenty-four hours for the verdict of the bacteriologist, I injected the anti-toxine, only to be told the next day it was not diphtheria.

No harm followed. I believe it pays to anticipate a possible diphtheria case, because from the nature of the remedy, and with proper antiseptic applications, I fail to see how any harm could result. The other five cases were examined, and the characteristic Klebs-Loeffler bacilli found. The cases might not have been serious anyway ; but as a matter of fact, they all recovered. I did not rely altogether upon anti-toxine. I gave the usual treatment in addition. No bad effects followed, except in one instance a little urticarial wheel surrounding the point of injection ; but, strange to say, the mother of the girl also had a similar affection, though she did not take anti-toxine.

There was no reaction ; that is, no decided depression as we get from tuberculin. In one case I remember, twelve hours after the injection, the temperature was perhaps two degrees higher than it had been, but by morning it had reached normal. The local reaction was characteristic in about every case. The membrane in twelve to twenty-four or thirty-six hours after injection assumed a watch-glass appearance, and gradually melted away. It was in flakes. In one case, however, the membrane persisted for weeks. The child was not sick, all symptoms had subsided, but repeated examinations by the agent of the local board of health here in Concord, proved that the bacilli remained for nearly eight weeks, showing the danger that that child would have exposed others to, had she been allowed to have gone about with them. In the use of this treatment, the microscopical examination is, of course, of the greatest importance, because it avails nothing to treat indiscriminate cases with a certain remedy when the case is not the case supposed to be treated. So, I think, local boards of health have a great duty to perform in this respect. It should be announced and given out to physicians that examinations will be made free. It will be of great benefit to the community, and of inestimable benefit to the men who want to use anti-toxine. It is a new remedy and it may be younger men are liable to be more enthusiastic than some of the older ones.

That perhaps is natural to youth ; but while not claiming it to be a specific by any means, not claiming it to cure a complicating bronchial pneumonia or an inflamed kidney, yet I believe that there has been no treatment yet devised or thought of in diphtheria that will give the results that anti-toxine will. The cases no doubt act better and do better when reached early, before the constitutional symptoms have reached their height. I believe it is claimed that the anti-toxine will not act as well when the disease has run four or five days, when the system has been saturated with the toxines, but in my experience I can bear testimony to its worth, and do not hesitate to use it in any case and every case where I can. That my future use of it will be as beneficial as the past, is more than we can expect, because my cases might have recovered anyway ; but statistics show that the mortality rate has dropped

at least fifty per cent. That cannot be a mere coincidence. There must be something in the treatment. At least I am willing to accept it as such.

DR. STACKPOLE.—We have come here to this society to get knowledge, to exchange ideas in the treatment of disease. We live to learn. I know but little about the germ theory, although I have read much that has been written upon the subject and found much discrepancy of opinion on the matter. I would like to know more. I will ask Professor Frost where these microbes or germs come from,—their origin. If they come from healthy, sound tissue and substances, or are the product of decomposition. Did they exist from the beginning of creation, in the air we breathe, the water we drink, etc.? I ask for information. I never believed in the theory, that they caused disease, or attacked a healthy organ, or disturbed a sound, healthy person. But I may be mistaken. That is what I wish to know. I have often been asked about diphtheria and its treatment, and if I ever have had it. I said no, neither am I going to have it, for I am healthy. I do not believe it attacks a healthy organ, and only when encouraged by degeneration or something that has caused disorganization and debility. I would like to know of Dr. Frost, if there is a different germ for every disease, or if the same one will cause different diseases. These things I don't understand. We are never too old to learn. I never believed, as I have said, in the theory that the germ caused disease. It may be invited by derangement to certain parts of the system, more usually to the throat, as in diphtheria; other organs may be afflicted. Dr. Frost has told us how to make anti-toxine the cure of diphtheria. We believe that poison gets into the blood and may be in the shape of a microbe, but how it gets in, we don't know. I can't say that I believe in the germ theory as explained by some. I believe the microbes are scavengers and subsist on waste, refuse elements as food, but not on live and healthy tissue, and do not disturb that which is sound and healthy. I have never used the anti-toxine for I had no faith in it, and can say nothing about it. My theory and practice have ever been, when I am called to see a patient, after making a thorough examination and correct diagnosis as I think, to

use those remedies that I have been successful in using in cases of like character, with such alterations as the case demands. My treatment of diphtheria has generally been successful with old and tried remedies which were used before anti-toxine was discovered. I would ask Professor Frost, if he would recommend anti-toxine as a reliable curative remedy in the treatment of diphtheria, as he said that he would use it. I understood him to say in his remarks that no doctor was qualified to practise medicine who did not believe in the germ theory. If anti-toxine is what some claim for it, surely it is a great discovery, but let us watch and wait. The principle seems to be *similia similibus curantur*.

Lawson Tait, a physician of eminence in Europe, says in a report, "That the germ theory of disease is no theory at all, but a phantasm, a system which has been proved an inconstancy and a broken weed—a thing which yields at every blast either to scholastic logic or eclectic experiment." According to the reports of some of the hospitals in Germany where anti-toxine is used, the death rate is very great and has not diminished by the use of the serum treatment, far greater than in this country, where medicines that have proved to be reliable, were used. Virchow, Semmola, Büchner, and many other eminent physicians of Germany, the birthplace of this new fad, the serum, condemn it, not only as therapeutically inert in curing disease, but actively injurious to the system. We should move slow and sure before adopting the fantastic fads of the day. We should prove all things and hold fast to that which is good. Tuberculin, the cure for consumption, made quite a stir for awhile, and was received with favor, until it proved to be a fraud. Gentlemen, you are aware that I am pretty old, and should have to live to be as old as Methuselah, nine hundred and more years, to try all the new theories and fads that are offered to take the place of the fine old theories and medicines of forty years ago. The treatment is very different now from what it was then. In olden time bleeding, blistering, calomel, jallup, etc., heroic treatment and the patients generally got well, but now, the treatment is very different, a little of most all the popular medicines of the day (scientific) so if one does n't hit another will,—a kind of puttering according to science of

some of the doctors of the present day. Professor Frost, from his remarks, favors the serum treatment. I do not. To illustrate my views of the old and new methods of treatment, I named pneumonia. The disease is the same as forty years ago, but the treatment quite different, as I have said. No matter what the disease may be, we should use our best judgment in the treatment, for the patient puts his life, in a measure, in our hands, and we should use our best judgment and skill to save the patient's life, for which we seem responsible.—Time was now called.

DR. LATHROP.—Among the phenomena of self-limited germ diseases, besides the personal change named immunity, there is sometimes another change which is effected in the pathogenic germ itself, whereby it loses, wholly or in part, its characterizing toxicity. As instances of this may be cited vaccinia and Pasteurized anthrax.

Now is it not possible that the Klebs-Loeffler bacillus, sometimes, as, when it still appears in throats for awhile after complete recoveries from diphtheria, may have lost its malignity and have become incapable of inducing the disease even in susceptible persons? And further, may not the value of some topical remedies lie rather in their power as modifiers of germs than as germicides?

Another query, which is suggested by the analogy which exists between tolerance of the diphtheria glucoside, which is so slowly attained by certain animals, and the tolerance to morphine which in similar manner and alike slowly, we see acquired by man. Now, is it not possible that the analogy extends further, even perhaps to a serum therapy in the latter as in the former? A few laboratory experiments would easily decide both points.

DR. FROST.—*Mr. President:* I remember well a remark of my predecessor in the chair at Dartmouth. Many of you remember Dr. Phelps. He said to me a short time before his death, “I would like to live fifty years longer to see what will be developed in medicine in that fifty years.” I think if he had lived up to the present time, that he would have truly said that these years were worth more than all the years that he had before lived. They are worth more than all the years that

the medical profession has lived, and the man who has not seen what has been done in the last twenty-five years has not truly lived. Do you know where surgery stands to-day compared with where it did ten years ago; with twenty years ago? How long is it since you heard surgeons in a case of amputation say, "It is suppurating well. The case is doing finely?" What would you think of a surgeon who would say that to-day? You demand of the operator that there shall be no pus after his operation. You have a right to demand it. Why? Because you know that suppuration is the result of the entrance into the wound of pathogenic germs. Germs! Does anybody doubt the influence of germs in causing disease to-day? It seems to me impossible. There is one book I wish gentlemen would read. I have read it more than once. It is a little book, the "Life of Pasteur." Just read that and see what Pasteur did for France years ago. He was ahead of his time, but he gave us facts which nobody to-day can successfully dispute. He educated Lister. Listerism is not laughed at at present. The advance of surgery depends upon Listerism or what it stands for. Is there any question about the communicability of puerperal fever or of its dependence upon pathogenic germs? We used to question whether a case of erysipelas could in any way cause puerperal fever. We do not now question it. If you had a case of puerperal fever, wouldn't you go home from the death bed of that patient and feel, "It is very likely I have killed that person, that I am responsible for that death? Have I not possibly introduced into that system, or have allowed to remain in that system some germs which have developed that fever?" We cannot practise medicine, we cannot do anything, unless we understand the influence of germs in disease. I find that my head is getting a little white. I wish I could live fifty years to see what is going to be developed in that time. I believe we shall find out how to practise medicine better than we do now. I believe we shall rest our practice on something which is scientific; that we shall have sound reason for what we do; we shall do as we do, not because we have done it before and our patient has recovered, perhaps, in spite of us; but because we know why we give our medicine, and we know what effects we can reasonably expect.

ably expect from it. As to this serum treatment, the points seem to me to be these: The germs of diphtheria find entrance into the system preferably about the throat. They set up this action. Toxines are developed in connection with them which enter the system. Toxines develop more and more. The poisonous element spreads through the system until it comes thoroughly under its influence. Now when do you wish to put in your antidote? If it is to be efficient, it should enter the system as nearly as possible at the same time when the cause of the disease enters the system. If your barn catches fire your chance of putting the fire out is best if you begin near the time the fire starts. If you wait for two or three days after this toxic element of diphtheria has entered the system, till it has affected the nervous centres, your chances of checking the disease are immeasurably less than if you take it at the start. Inasmuch as the effects of injection of the serum when it is not needed are apparently for the most part harmless (there may be serious effects which will appear as it is used more and more), still the dangers so far seem to be nothing as compared with the good effects. I would advise the early use of it. If I had a child sick with diphtheria I should try the anti-toxine treatment as soon as I could get reliable anti-toxine.

PROF. FROST, in reply to Dr. Lathrop regarding the reliability of anti-toxine furnished by the board of health of Boston.—I feel somewhat embarrassed because I have had no personal experience. I can only say this, that I believe that the Pasteur Institute in New York is thoroughly qualified to furnish a reliable article. I think that probably the board of health of Boston would be likely to furnish a reliable article. I would not purchase anti-toxine with any expectation or certainty of its being a good article, unless I should get it from some institution where I believe they are fully qualified and are in such condition that they are free, as they should be, from a pecuniary interest in the production of the anti-toxine.

# MODERN METHODS OF TREATING NOSE AND THROAT DISEASES.

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BY O. B. DOUGLAS, M. D., NEW YORK.

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*Mr. President and Fellows:* Our interest in this subject seems to center upon treatment—that which cures. But first, we must have a knowledge of the diseases and it may be well to know how we get them—the etiology, and to consider their complications and effects.

Diseases of the nose and throat are more numerous, of more frequent occurrence than at first thought we might suppose; there is a longer list of them and a longer train of evil effects than is likely to be recognized by one who has not carefully considered this matter. In the twenty minutes devoted to this subject we can hardly more than mention a few of the more common diseases such as are of most frequent occurrence and cause, in the aggregate, the most suffering.

Things we see oftenest impress us the least. We give more attention to the infrequent diseases than to those we are called oftener to treat. Common, every day conditions lose their terror, however bad they may have seemed or really were.

This law (of callousness) explains our indifference to a common cold, which often is but the initiatory stage of grave and fatal maladies.

President Lincoln is said to have observed, that “The Almighty must consider common things important for He made so many of them.” These diseases are important because they are so numerous and so far reaching in their effects. The opprobrium of our profession is in not curing common ailments, those little ills which, in the aggregate, cause greatest distress,—not the rare, infrequent, obscure conditions.

Diseases of the nose and throat may be acute or chronic,

simple or complicated, local or general, organic or traumatic, acquired or congenital, benign or malignant. An entire catalogue comprising the acute, subacute, and chronic stages would be long and tedious and not to our purpose. But we should be able to differentiate syphilitic, tuberculous, cancerous, exanthematous, diphtheritic, mycosic, traumatic, and other less important conditions. We must recognize the peculiarities of various tumors; the condition of the numerous sinuses (accessory to the nose and throat), excessive or scanty secretions and their character, empyema, necrosis, etc. We have coryzas, congestions, inflammations, hypertrophies, hyperplasias, atrophies, and ulcerations. Not only these special diseases of the nose and throat but many so-called constitutional diseases which affect seriously, these organs. Of the two hundred and fifty more or less distinct diseases that flesh is heir to, a large percentage of them show effects in the throat, not mere complications, but as a part of the disease. We look there for confirmation of our diagnosis.

There are never two noses interiorly alike—any more than there are two faces alike; it requires the exercise of good judgment, and a moderate degree of skill often to determine pathological from physiological conditions. Cultivated common sense is never out of place when called in consultation to a case of ordinary nasal catarrh.

That which in common parlance is termed catarrh is but a symptom, an expression or effect of a diseased condition. We do not think of bleeding as a disease but as a result of traumatism or other cause. In the popular mind catarrh means indefinitely (as charlatans teach) a blood disease, a bad breath, difficult nasal respiration, a dry throat, enlarged tonsils, or bad taste. Patients will tell you "their palate is down" (meaning an elongated uvula), that they have pain in the nose, over the eyes, in the temples, or back of the ears; that they have a hacking cough, a frequent desire to clear the throat, and point to the suprasternal notch, saying "There is all of the trouble." These ills may result from one and the same cause; and I desire especially to emphasize the importance of determining first of all, the cause of that of which the patient complains.

Having determined the cause we seek to remove it. If it be a syphilitic sore throat give "mixed treatment" if you wish, but you will more often get positive results from the use of large, increasing doses of Potassium Iodide. I am in the habit of ordering 20 grains, in solution, to be taken in a glass of milk before eating, three times a day. This quantity is to be increased five grains each day until the desired effect is produced, unless undue iodism results, when the medication may be suspended for a few days. Often three hundred grains per day is taken by a patient. Locally spray the diseased parts with peroxide of hydrogen and insufflate aristol.

Tuberculosis of the larynx is one of the most distressing maladies humanity is called to endure. Our modern methods of treatment have greatly lessened the suffering and resulted in positive cures in numerous cases. The principle which underlies the various methods of treatment is to destroy the germs in their local habitat by curetting and applying either pure lactic acid three times a week, pure ichthyol, (Dr. Bereus's method,) or a twenty grain solution of silver nitrate, (as practised by Dr. H. B. Douglass). A later method, which promises excellent results, is the injection of a 25 per cent. mixture of creosote by means of a special syringe devised by Dr. Chappell, through whose kindness I am able to show you the original instrument for this purpose. You can find a full account of his method in *N. Y. Medical Journal* of March 30, 1895. Local treatment other than to soothe and cleanse is of little benefit unless resort is had to these heroic measures.

Sarcoma and carcinoma are best treated by extirpation, if that is possible. Dr. Coley and others report some wonderful results from the injection of the specific germ of erysipelas into the tissues surrounding these tumors in cases where they cannot be removed.

In treating diphtheria—and all acute inflammations of the throat—mild medicines given often will serve you far better than harsh and heroic treatment at longer intervals.

I do not believe that anti-toxine has come to stay. Prof. Winters recently gave us (at the New York Academy of Medicine) an *exposé* of its use in the Willard Parker Hospital for contagious diseases. It seemed to do more harm than good.

I know of no surer way to cure diphtheria than to attack it *in situ*. My method which has given best results is to begin at the earliest stage possible and give the following medicines with unfailing regularity.

Rx	Tinct. Aconitæ gtt. xx
No. 1.	Tinct. of Belladonæ 3ss
	Glycerine 3jv
M	Aquæ Gaultheriæ ad 3jv
Rx	Potass. Chloratis }
No. 2.	Sodii Bromidé } aa3ss
	Glycerini 3ss
	Tinct. ferri chlor. 3ss
M	Aquæ ad 3jv

DOSE,—Half a teaspoonful for an adult.

These are to be given alternately every half hour, thus bringing the doses fifteen minutes apart. This frequency may seem severe upon the patient, who gets little sleep during the first twenty-four hours, but we have a severe antagonist to combat and must not relax our warfare till we conquer, which I expect with almost as much certainty as I would in a case of measles. In addition to numbers 1 and 2, I would always use a spray—often and freely—composed of 12 grains of carbolic acid in four ounces of lime water. All of these preparations are agreeable to take. I give liquid nourishment freely, milk being ordinarily best. Whiskey sparingly at first, but sufficiently to get the desired effect as a tonic. Bichloride of mercury may be of service sometimes. Intubation and tracheotomy if necessary.

More frequent than any other disease, more widely distributed and more destructive to usefulness and happiness—if not to life, is that we have spoken of as causing catarrh. And what is the disease? has been earnestly asked a thousand times. What causes such wide destruction? Has it a specific micro-organism? We think not. Is it a blood disease? No. Can it be cured? Yes. Is it difficult to cure? Not specially. How would we go about it? Remove the cause. What is the cause? Now we have arrived at the starting point. Our duty, as surgeons,

is to find that cause. Where shall we look? First in the mouth and throat. Here we will probably find the index which points toward the cause. Observe the tongue, fauces, tonsils, posterior and lateral walls of the pharynx. A typical case of catarrh would show a relaxed uvula, enlarged tonsils, follicular pharyngitis, thickened and inflamed tissue back of one or both posterior pillars of the fauces. There would be some hoarseness, a tickling and tendency to cough. Examine, if you please, the larynx; you will find the vocal bands slightly colored, the whole larynx mildly congested. Look into the superior pharynx. Here is more trouble. The adenoid growth enlarged; the posterior ends of the turbinate bodies hypertrophied; the septum thickened and the whole passage bathed in a thick, tenacious, muco-purulent fluid. Examine the nose anteriorly. The inferior turbinate body is enlarged, the septum more or less deflected. In one or both sides you may see, above the inferior body, a mass filling the fossa and pressing upon the septum. It is excessively sensitive, and the mucous membrane generally is congested and hyperesthetic. Cocaine solution, ten per cent. applied, blanches and contracts the tissues about the lower turbinate body, but reveals more clearly the stubborn persistency of the enlarged middle turbinate body which is still tender, and, if we attempt to pass a probe between the body and the septum it causes severe pain, often reflected to the supra-orbital region, but especially intensifies the habitual pain in the head.

The history of this case, as given by the patient previous to examination, is about as follows: frequent and easily acquired cold in the head; pain over the eyes, in the temples, and lateral portion of the occiput; eyes watery, sometimes painful, with difficulty in seeing distinctly. The hearing is not as acute as it should be, and there is a buzzing or roaring in the ears. The throat is frequently sore; breathing through the nose is difficult or impossible; mouth breathing, especially at night. The tonsils swell and occasionally suppurate. The stomach is out of order, bowels constipated, liver torpid, and a general tired feeling with more or less pain of a neuralgic character. Such cases we see very often. It is difficult to believe the little mass we saw pressing the septum, (in spite of persuasive cocaine,) to

be the cause of all this suffering. But we are persuaded that the hypertrophied middle turbinated body is capable of more mischief, can cause more suffering, directly and remotely, than any other mass of its size in the human body. It will not contract, cocaine has proved that ; it must be removed. We anesthetize it as thoroughly as possible, then with scissors adapted to the work shear off such portion as must come away in order to leave the space clear after the parts have healed.

Do not cut away any more tissue than is absolutely necessary, but be sure you get just enough. We cannot cut at the further end, and must twist off the mass with forceps. This causes some pain, differing greatly with different people, but not as severe as the extraction of a tooth. A pledget of cotton wound loosely upon an applicator, moistened in a solution of aceto tartrate of aluminium, (a  $\frac{3}{4}$  j to the  $\frac{3}{4}$  j) and perhaps fortified in its hemostatic power by a solution of perchloride of iron—is inserted where the tissue has been removed, and a cotton tampon placed in the nostril anterior to the first. This latter cotton to be changed as often as it becomes moist ; the former may remain twenty-four hours or longer, as the alum is one of our best antiseptics. This operation is the one most frequently required, but any persistent contact of surfaces in the nose that ought not to touch, will certainly cause trouble and must be relieved. Herein lies the key to successful treatment of catarrhal affections : REMOVE THE CAUSE. In reviewing older methods the contrast is very marked. Eighteen years ago I was taught by one of the best specialists in this country, to swab out the throat with a solution of silver nitrate, and make similar applications to the lower turbinated bodies if they were thickened. I regret to say that that man—conscientious and honest—met with such poor results—as he told me—that he determined to give up this special work and devote himself to general medicine, and he is to-day in general practice, one of the best.

The evolution of modern methods has been slow and labored, but persistent and successful. In no department of surgery has there been greater improvement than in the treatment of nose and throat diseases. I well remember attending a clinic in Charity Hospital, New York, in 1876 at which Professor Lister did an operation, demonstrating his then new theory of anti-

sepsis and disinfection. What marvelous changes have grown from that theory!

We might inquire how a mere contact of surfaces (that ought not to touch) in the nose, can cause so much trouble. I answer:

First. The immediate, local effect upon two surfaces, so sensitive, must be irritating; evinced by a tendency to sneeze, by local pain, etc.

Second. The nose being an important organ, directly communicating with the brain and all other organs in the head—must be carefully guarded; hence there are numerous reflex irritations resulting from this primary cause.

Third. Secretions, which are normally profuse in the nose, amounting to five or six drams per hour, are retained by this artificial dam, become acrid, overflow their bounds, irritate adjacent parts, and produce congestions and inflammations, *exempli gratia*, rhinitis, pharyngitis, faucitis, amygdalitis, and laryngitis.

Fourth. By extension of these induced troubles to other organs; the lachrymal ducts, the eustachian tubes, and middle ears. Ninety-two per cent. of otitis media are induced by extension of nasal inflammation. The effort to breathe through an obstructed nostril produces a partial vacuum, acting as a cupping glass and causing congestion alternating with undue pressure in the tubes and middle ears. Acrid or purulent secretions are forced into the orifices of the tubes by this pressure, and deafness results in many cases.

I have by no means exhausted the list of evils resulting from obstructions in the nose, but I may have mentioned enough to call your attention to the importance of the subject and convince you that the ounce of prevention—removing the cause—is worth many times the pound of cure.

Adenoids at the vault of the pharynx, usually a secondary disease, especially of childhood, must be removed with forceps or curette, and should be done while the patient is under the influence of an anesthetic.

It is not so important to excise enlarged faucial tonsils. I rarely find it necessary, preferring, rather, to take away the irritant. The disease is rarely inherent in the tonsil. We should punish the culprit and not the victim.

Wrongs are not righted by deplored them, neither are they corrected by counteracting their evil effects. So, diseases are not cured by treating their symptoms, nor suppressed by doctoring their results. The terms of success are not subject to revision. Modern methods are founded upon a knowledge of cause and effect. Like labor in childbirth, effort may be spasmodic, but the more constant it is, the better. Cures are always difficult to obtain, and never acquired unless we pay the price. We have to deal with organs that are constantly in use—never at rest.

Organs of such importance as the nose are always protected by nature in a special manner; but when we consider the excessive exposure to infections malarial and bacteriological, to dust and noisome gases, to traumatisms and distortions—we wonder, only, that we are yet alive.

THOMAS HILAND, M. D., of Concord.—*Mr. President:* I take this opportunity of thanking Dr. Douglas, or rather, if I may have it, Professor Douglas, for his teaching this morning, and his teaching for many years past that I have had the pleasure of listening to. He does take the ordinary diseases, he gives you patients that are afflicted with those ordinary diseases that we all are called upon to treat. Never have I seen him bring into a clinic an unheard-of case; never have I seen him bring in a case that I would not see perhaps twice if I was to travel the world over. He teaches just as he has given us this morning, the diseases that we want to know the most about because they are constantly with us.

To look into a throat, to look into the mouth and the nose, gives you a true picture of the individual. You know how much vitality there is there. You know pretty well what that person is good for. If a young man is brought to you for military or naval service, you first look in his mouth and his throat, and you know whether he is going to pass or not. You may accept or reject him at once. True you go on and examine other organs, but the throat and the mouth and the nose have told you whether he is sound, whether he is a person to be supported by the country, whether he can do efficient duty for the country. There is one thing that physicians are

blamable for. There are many cases of deformed noses. Many a person is brought to you perhaps from the baseball field, perhaps from some other arena, with a bleeding nose, a deformed one. It is swelling rapidly, and he is brought to you for treatment. You use some cold water, perhaps you plug the nose, perhaps you push it into place as well as you can, and you hope the result is going to be well. Very likely it will not be well. You may see him the next day or you may not. It is only a nose. Now here is a deformed nose for life. If it was a fracture of the elbow, or an injury to the thigh or the knee, or the leg, you would be sued for malpractice, but for some reason the community does not know that a nose can be righted, and consequently there is no complaint. He had a broken nose. That was all there was about it. This is not right on our part. You cannot always make an injured nose a good one, but for the most part you can, but you cannot do it when it is so swollen and bleeding, so that the hemorrhage is the principal thing in the mind of the patient and of his friends. You can only arrest and partially put to rights. But it is the next day, and it is the third day, and the fourth day that by the use of forceps, by use of plugging, by use of good common sense, that you can right and make a good nose; and it is a persistent work, and it is one that is very provoking, especially if it is the cartilages that are displaced. I can get along very well with the bones and very easily. The little nasal bones seldom trouble us much. The perpendicular plate of the ethmoid you can generally get into place and easily keep it there. The vomer you can get along fairly well with, but it is those cursed cartilages that trouble the most, because you get them in place and they do not stay, and the next day you find you have the same work to do over, but persistence will tell, and you can make a well-shaped nose as a rule instead of having a deformed one. Ordinary hemorrhages from the nose come as frequently to the practitioner as anything else, and it would be well for us all to remember that many of these hemorrhages come from a little artery on the septum which is easily seen, which is not more than half an inch from the end of the nose, and if it persists in bleeding, time and time again, you may know that the little opening into the artery does

not close well, and the better and the quicker way is to cauterize it with some strong acid. In other words, destroy the little vessel and the bleeding will not recur.

Another thing that comes to us very frequently is a sore throat, which is specific, that is, the beginning of secondary syphilis. It is not very sore ; it only has a little inflammation, the posterior pillars and the anterior pillars, that is about all. This needs very little local treatment, but in a few days or a few weeks, generally a few days, there will be other marks. There will be superficial ulcerations, generally upon the tongue, upon the tonsil, and other portions of the throat, when a little treatment locally will be needed, as well as the constitutional treatment. The person may have a bright coryza ; he says he has taken cold. This sometimes appears before the secondary eruption on the skin comes to guide you. With this picture in the mouth and in the nose, you have no hesitation about putting the person on specific treatment, which, as we all know, in this early stage is mostly mercurial. Later on in this same disease, you discover an entirely different picture, as, for instance, there will be little tubercular swellings in mouth and nasal passages, not very bad, but by and by they commence to break down, and make deep ulcerations, this, of course, being a later manifestation of the same disease. This means very much more, because they will not always get well by themselves, and it is here that a mixed treatment comes in, and it may be it is from Professor Douglas that I have the idea that the iodide of potassium when it is put with iron, and with a little corrosive sublimate, and combined with the tincture of nux vomica and compound tincture of chinchona does act better than any one of them alone, and the only secret there is about it is that the apothecary shall know how to make the mixture, that each salt shall be dissolved in a little water by itself, the solutions mixed and the tinctures added, otherwise you have a deposit upon the glass, and you have lost your prescription.

There is, perhaps most of all, what is known as ordinary sore throat in English without translating it into Greek or Latin or any foreign language, an ordinary sore throat. The person has taken cold. He commences to hem and to hack

and to clear his throat, and he goes on week after week. You look into the throat. The epithelium is partly off; it is partly on. There are no ulcerations proper. You look on to the vocal cords, and they give the impression of being soft. They are a little congested. The edges are not white; they are reddened. Not a bright red, perhaps the word "soft" expresses it to myself as well as anything. You look at the posterior nares. Well enough; nothing there. You look at the anterior nares. Nothing there. But here is an individual who has been hemming and hacking and clearing his throat, and he comes to you. The first and principal thing in those cases is that you shall make the person, if he has any brains, stop that hemming and hacking and clearing his throat, stop it entirely. There is no necessity for it, and if he has any will power left, he can stop it. That is the first and principal part of the treatment. In order to assist him I would give him one of those fancy little things which we know as rhinitis tablets. Try it yourself. You commence to take cold, or get an irritation in the throat. Put one on the tongue. You will find that stops it. So it will assist your patient. The only other thing I would suggest would be a spray of iron alum, not very strong, and not too often. Again I thank Dr. Douglas.

# ELECTRICITY IN THE HANDS OF THE GENERAL PRACTITIONER.

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BY G. H. SALTMARSH, M. D., OF LAKEPORT.

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*Mr. President and Fellows:* In presenting a paper to this body of bright and learned practitioners of medicine, I do so with a feeling of diffidence, believing that there are others here to-day, who, having had a larger experience in the application of electricity as a remedial agent, would do greater justice, both to the subject and the society. The experience of the writer has been somewhat limited, as may have been the case with the majority of practitioners in the smaller cities and towns. No one in general practice can devote the necessary time to a special subject covering such a broad field as does the one under consideration. It is those who can give the matter special study and thought, and having extensive clinical advantages, who will achieve greater success. There is much, however, that the general practitioner can do in this particular line that will be fruitful in satisfactory results in many cases when medication has not met his expectations. As this paper is to be brief, it will touch only upon a few points which are likely to have a practical phase for consideration.

The uses to which the different electrical currents are put at the present day are numerous and varied. No ailment to which the human body is heir has escaped its onslaught, sometimes fraught with danger for patient and discouragement to the physician. But no greater or more ridiculous have been the mistakes in experimentation with this than other and less occult remedies that go to make up our extensive armamentarium, and the beneficial results obtained are such that it can no longer be thrust aside by its many pronounced antagonists of the recent past. The success of the physician with this, as

well as other remedies, must depend largely upon a proper understanding of the work in hand and the care with which he makes all applications, for there is no agent in the use of which greater caution is necessary.

No attempt will be made in this paper to go into any detail of the elementary principles of medical electricity, the different kinds of batteries and their construction, or the many different instruments or appliances used in the various kinds of work; only a word or two in regard to what is most essential: A substantially constructed galvanic battery of at least twenty cells, and a larger number are often an advantage even for lighter work, and a well working, portable faradic. The next and really most necessary article is the milliampèremeter, for it is absolutely unsafe for anyone, whether familiar with the use of electricity or not, to attempt to apply even the milder current without knowing its strength. No reference can here be made to the innumerable number of electrodes, only as they may be incidentally mentioned in connection with some special work. It may be suggested just here that it is a simple and easy matter to prepare at a small cost a large number of these. They may be made from carbon, thin sheet copper, sheet lead, or light copper screening, and of any desirable size and shape. The binding post can be soldered on by the tinsmith, then covered with sponge or soft flannel cloth. One can often make in this way what can be adapted to some peculiar case more satisfactorily than anything which can be procured from the instrument dealer.

#### REMOVAL OF FACIAL BLEMISHES.

One of the simpler operations and one affording very gratifying results to both patient and physician, is that for removal of facial blemishes. We are so often consulted by persons, more especially ladies, for removal of superfluous hairs from some part of the face that it seems almost necessary to have some remedy at hand for relief, and there is, to my knowledge, nothing but the electrolytic action of the galvanic current that will accomplish it. The process is very easy, requiring but little skill to do the work and a comparatively inexpensive outfit. The galvanic battery, milliampèremeter, two conducting

cords, a sponge electrode, needle holder, needles, and a pair of epilatory forceps. The patient should be seated or semi-reclining before a well-lighted window, holding in the hand the sponge electrode, previously moistened and connected with the positive pole of the battery. The operator, with the needle holder in the right hand, introduces the needle into the follicle beside the hair until it has reached the base; the circuit is then completed. A few seconds' time is allowed, during which the forceps are applied by the left hand, slight traction is made, and if the follicle is destroyed no particular force is required to remove the hair from its bed. It is better not to remove several hairs that are in close proximity, but over a scattered area, as this will prevent the possibility of lighting up any inflammatory action. Usually from twenty to fifty hairs may be removed at one sitting. The eyes of the operator will tire of this somewhat trying process if continued too long, and the patient will, although suffering no pain, get restless. The current need not be stronger than three or four milliampères.

The removal or destruction of papillomatous growths and small nevi may be accomplished in much the same manner. The sponge electrode is held by the patient or placed firmly against some part of the body. A single needle of somewhat larger size than the one for the former work is used, or the double conducting cord with two needle holders attached, and the latter seems preferable, especially if the base of the growth is of any considerable size, as one needle may be removed and reinserted, while the other is doing its work, and the patient will hardly realize what is being done. The needle should enter at the junction of the growth with the healthy skin, or slightly beyond it, carried through and out at the opposite side at the same line. It should remain in position from twenty to forty seconds or until electrolytic action is thoroughly accomplished. The number of punctures necessary will depend upon the size of the growth and strength of current. The distance between them should be about one sixteenth of an inch. From three to five milliampères are sufficient for ordinary cases. The cicatrices remaining after this procedure are noticeably less than after the use of the knife. The total obliteration of the supplying vessels causes the immediate death of the excres-

cence if the operation has been carefully done, and in a few days the mass falls off, leaving a smooth, healthy tissue.

#### NEURALGIA.

In the treatment of neuralgia, we are often happily surprised at the rapidly beneficial results obtained from galvanism when other agents have hopelessly failed. In gastralgia of a purely functional nature, permanent relief is often obtained from a few applications of a strength of ten or fifteen milliampères. The same may be said of hepatalgia ; the relief following the application of a similar current has given better results than any other remedy, in fact when others, save morphine, gave no relief, one treatment has put the patient in a comfortable and happy state for days.

For the purpose of diagnosis in cases where there is doubt as to whether there is organic lesion, such as gastric ulcer, carcinoma, etc., one application is said to remove all uncertainty, as there will be no amelioration of symptoms if there is existing structural change.

What has been said regarding its value in neuralgic conditions of these particular localities is as applicable to the same disease in other parts. In this connection it may be well to mention the beneficial results obtained by faradism in atonic dyspepsia, for its tonic effect upon the muscular layer of the stomach and the increase in quantity and improvement in quality of the gastric juice under its stimulating action. Constipation due to atonic condition of the bowels, or weakness of the abdominal muscles, is often greatly relieved by the same means.

#### RHEUMATISM.

The indiscriminate use of electricity in the different forms of rheumatism has resulted in failures in many cases, but that it is particularly efficacious in certain stages of the disease, there can be no doubt. In the acute stage it is of doubtful value, but after the subsidence of the acute symptoms, convalescence is hastened by general faradization. In the subacute form of the disease more benefit may be expected and it is well to give every obstinate case a thorough trial. One should never feel

too sanguine of happy results for there are cases where it does no good, no matter how faithfully used. This failure may be due, perhaps, in some degree to the idiosyncrasy of the patient, which will occasionally assert itself under electrical treatment for any form of disease, and it is always well for one to bear this in mind under all circumstances.

#### URETHRAL STRICTURE.

Touching upon the treatment of urethral stricture by electrolysis is something like stepping on a quicksand, so severely has it been condemned by many physicians. There can be no doubt that many failures have resulted from its use in the hands of unskilled manipulators, but disappointment must sometimes follow in this as well as other procedures. Dr. Newman, one of the most enthusiastic as well as successful operators, has achieved most flattering results, and it may be well to mention some points in the operation which he considers particularly essential and I will refer briefly to his method.

Assuming that the physician has at his command the proper paraphernalia, which includes the galvanic battery, previously tested to insure its being in good working condition, milliampèremeter, sponge electrode, and a set of Newman's urethral electrodes. The exact location and caliber of the stricture having been ascertained, the urethral electrode is warmed, lubricated, and connected with the negative pole of the battery. One, two or three sizes larger than the stricture, is selected. It is introduced until the bulb is arrested by the stricture. It is well before placing the electrode to mark upon it the distance of the stricture from the external meatus, that no mistake may occur. A common sponge electrode, moistened with warm water and connected with the positive pole of the battery, is held firmly against the patient's body to complete the circuit. With both poles held in this position the current is increased very slowly and gradually from zero up to from two to five milliampères. In many cases three is sufficient but five is the maximum. The bougie is kept firmly against the stricture and the operator will soon find that absorption is taking place, that the narrowing yields and the instrument steadily

advances and passes the obstruction. If there is more than one stricture the electrode should be guided in the same way until it enters the bladder, then it is slowly withdrawn and each stricture is worked out until the first one is repassed, when the current is slowly reduced to zero and not until the current is entirely off is the electrode removed. During the entire operation the instrument is held loosely and gently against the obstruction, absolutely no force being used. The bougie will take care of itself, doing its work by the electrolytic action of the current. The thumb and first finger is all that is necessary to guide the electrode. Gentleness must be exercised to the greatest degree as the use of any force would prevent the action of the electrolysis and only act as an ordinary dilatation. The whole operation should occupy from five to not more than fifteen or twenty minutes. Electrolysis is applicable to all strictures in any part of the urethra and all are amenable to treatment. There is no pain, inconvenience, or danger. The object is to absorb the stricture, not to cauterize, burn, or destroy the tissues. At each subsequent sitting an instrument two or three sizes larger should be used until the desired result is obtained. Usually from three to seven or eight treatments are necessary to produce the normal uniformity of the urethra.

#### PROSTATIC HYPERTROPHY.

In consideration of the neighborly relationship existing between the disease just mentioned and hypertrophied prostate, it would seem unjust to pass the latter without recognition. Although I have not applied electrolytic treatment to the gland according to the strictly scientific method, the results from rather a crude process lead me to believe that it is a potent remedy. Many of the distressing symptoms have been so modified under its influence, it impressed me as being worthy of trial in every case and good results may reasonably be expected.

#### UTERINE FIBROID.

There are no diseases in which electrotherapeutics has been more assiduously used than in those peculiar to women. But to only one condition will we call your attention. Very hastily

will reference be made to the treatment of uterine fibroids. It is some thirty years since electricity was first used for this condition, and it was nearly twenty years later when Dr. Apostoli first made a methodical application and with his methods every one using the current should be familiar. Later some of the rules established by him will be mentioned.

The equipment necessary consists of the galvanic battery capable of producing a current of at least two hundred milliampères, the milliampèremeter, abdominal and intra-uterine electrodes, and trocars for galvano-puncture. The accessory appliances will not be considered, as those just mentioned are sufficient for ordinary uncomplicated cases, and it is only of such that I will speak. The abdominal electrode best suited for the work is made from clay, moulded in a form of desirable shape and size, usually about eight by ten or ten by twelve inches in diameter and three fourths of an inch thick, receiving upon its superior surface the metal plate which is firmly pressed into the pad to complete the circuit. The under surface is covered with muslin which folds over the upper one holding the clay in shape. Care must be taken that the abdominal surface is uniformly smooth and free from foreign substance. The intra-uterine electrode of Dr. Apostoli is a straight platinum stem, sliding in a hollow wooden handle which can be fixed by a screw at any given length. The sound should be made of platinum or gold as no other metal withstands the action of mercury or the acids of the positive pole. The sound, excepting the part within the uterine cavity, must be covered with a shield of hard rubber or glass to protect the wall of the vagina. The trocar is a straight metallic stem terminating at the end in a platinum or gold point and insulated with hard rubber like the sound.

Before beginning the operation, a thorough inspection of the battery connections, conducting cords, etc., is necessary to be absolutely certain that everything is perfect. The abdominal pad is moistened in cool water, and the patient having received an antiseptic vaginal douche, loosens or removes the clothing sufficiently to facilitate the placing of the pad, assumes the dorsal position upon the table or operating chair with the knees flexed at right angles to the body. Examine carefully the sur-

face of the abdomen for any abrasions of the skin which must be properly protected. The electrode is then made to fit evenly upon the underlying parts and the patient may be requested to allow the hands to make gentle pressure upon it. The intra-uterine electrode, having been rendered aseptic and connected with the positive pole, is carried upon the index finger to the cervix and gently pushed to the bottom of the uterine cavity. It is sometimes difficult or impossible to carry it to the desired depth, because of displacement, spasm, or some other cause. When it can only be partially accomplished without considerable pain or discomfort to the patient, the treatment may be carried out with the instrument held at this point and the insulating shield pressing firmly against the cervix. One hand should hold the handle of the electrode and the other be kept constantly on the controller or switch of the keyboard, and constant watch being had of the patient's face and also the milliampermeter after the current is working. If pain has resulted from the introduction of the sound, a little time may be allowed before the current is applied. Assure the patient that the treatment shall cease if there is any distress. The current can now be very slowly increased, carefully watching both patient and instrument. If pain is evident, cease to increase and if necessary reduce the strength until comfort is restored and then advance as before. At the first sitting it is wise not to go above fifty or sixty millampères, even when kindly borne. After four or five minutes the current should be slowly reduced to zero and the electrodes removed. Advise the patient to remain quiet for a time and to avoid active exercise for twenty-four or forty-eight hours. An antiseptic douche ought to be used night and morning. There is likely to be some leucorrhæal discharge and possibly some uterine pain.

Galvano puncture is sometimes necessary as well as preferable, as when the cervix is in such position as to prevent the introduction of the sound, or when more rapid action is demanded. The puncture is made at the most prominent point of the tumor within the vagina, care being taken not to injure the bladder, rectum, or large blood vessels. Thoroughly explore the region with the finger and by this means the proper point may be selected. When this is done, slide the trocar upon the point

of the finger as in passing the sound, then force the point to the desired depth, from one half to one centimetre. The remainder of the procedure is identical with the use of the electrode. After the removal of the trocar it is well to pack about the puncture some antiseptic gauze or other dressing and insist upon the use of the antiseptic douche. The subsequent treatments are to be conducted upon the same principles. The current, if reasonably well borne by the patient, is gradually increased until one hundred and fifty or two hundred milliampères are used in order to accomplish the desired result. It is well in beginning the treatment to use the positive pole, and in case of hemorrhage, endometritis, or when there is considerable pain, this pole is indicated. Otherwise the choice of poles depends largely upon the susceptibility of the patient and existing symptoms. Sometimes more satisfactory results follow their alternate use.

There is no special time for treatment, either process may be carried out during menstruation or during an attack of hemorrhage if there is no inflammation or fever. Ordinarily, however, it would be preferable to do the work at some other time unless the urgency of the case demands that it be continued under these less favorable conditions.

Complications contra indicating the use of either procedure are principally the following: Acute uterine or peri-uterine lesion, any suppurating peri-uterine disease, cystic or fibro-cystic tumors of the ovaries or tubes or ascites. Notwithstanding these, some operators advise a trial of galvanism even when these conditions exist, but more conservatism is commendable, especially in private practice. One should thoroughly consider the gravity of the condition before attempting an experiment fraught with any considerable danger.

Any uncomplicated case of uterine fibroid may be safely treated by the means mentioned and if done according to suggestion of Dr. Apostoli all danger is reduced to a minimum. The interval between treatments will vary according to conditions, usually from three to seven days when the sound is used and from eight to fifteen after using the trocar. The number of sittings in a given case cannot be previously estimated. The patient ought always to understand the principle involved in

treatment: that the complete obliteration of the tumor is not expected, but that there will probably be a perceptible shrinking, and that its subsequent growth will be stayed. She may reasonably expect marked relief from distressing symptoms and improvement of the general health.

Dr. Apostoli advises a constant and thorough antiseptic practice. Always know the condition of the patient during the interval of treatment. For puncture he observes the following rules:

Make the puncture only every eight or fifteen days and suspend treatment if fever threatens.

Make without exception only superficial punctures, not more than one-half, or at most one, centimeter deep.

Never make a puncture in the anterior cul-de-sac.

Make use of a fine trocar.

Never use a speculum through which to make puncture. Before operating make a minute and scrupulous examination. Puncture as near as possible to the body of the uterus.

Choose for the seat of puncture the most prominent point of the tumor found in the vagina.

Never make puncture above the pubis through the abdominal wall.

In the spring of ninety-one Mrs. B. consulted me regarding a "bunch" in the abdomen, which had been recognized nearly two years before, but it was only during the preceding four months that the condition had given serious annoyance. At this time menstruation was excessive and painful, there was flooding between the periods, backache, general pains through the pelvis and down the limbs. The patient was constipated and unable to walk about without severe pain. Examination revealed an interstitial fibroid in the superior uterine wall evidently about five inches in diameter. Electricity was at once applied, the current was well borne without any inconvenience or pain at any time, eight applications were made covering a period of about six week. At the end of this time menstruation was regular and normal, pain had entirely disappeared, constipation was relieved and there was no inconvenience in walking or doing her house work. The size of the tumor had diminished nearly or quite one half. There has been no return of any of the symptoms previously existing. The results obtained in this

particular case were unusually rapid, but in no case of uncomplicated fibroid has this plan of treatment in the hands of the writer failed of giving most satisfactory results.

DR. FRENCH, of Concord.—No one else has complimented Dr. Saltmarsh. I wish to say a word, and tell him how interested I have been in his paper. I have used electricity more or less for the last few years, more especially to alleviate the pain from neuritis of small extent, and also for the relief of pressure paralysis, with very gratifying results. I am using it now for a case of neuritis of the ulnar nerve and its branches, and I have just treated a case of pressure paralysis of the nerves of the arm with very satisfactory results. Some years ago I made a series of experiments with galvanism for melancholia, but without much effect or with any gratifying result.

## ADDRESS

TO THE GRADUATING CLASS OF THE DARTMOUTH  
MEDICAL COLLEGE, HANOVER, N. H.,  
NOVEMBER 20, 1894.

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BY A. NOEL SMITH, M. D., DOVER, N. H.

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*Mr. President, Gentlemen of the Faculty, Members of the Graduating Class, Ladies and Gentlemen:* Fortunate, and greatly to be envied, is the man who, upon public occasions, knows the best things to say, just how to utter them, and when to stop. I fully appreciate the honor attendant upon the position occupied by me to-night, as, also, the many difficulties which beset the pathway of the graduation address orator. Time out of mind these addresses have been delivered, and the field of topics so thoroughly culled, that very little of novelty is left. The trend of these orations has usually been along the line of generalities. I wish to step aside somewhat from the already well-beaten pathway, and devote a portion of my allotted time to a special subject.

During an interview with Dr. William A. Hammond, at Washington, a short time since, he expressed great surprise at the lack of agreement among medical observers. A physician here will employ a certain remedy in a given number of cases with good results, while a physician there, in every sense the peer of his brother practitioner, using the same remedy upon a like number of similar cases, reports a large proportion of failures. This applies, also, to original investigators in the province of disease, and is, to my mind, a healthful sign; for out from the confusion of adverse opinions will be evolved at length those scientific principles which are true and lasting.

Many points there may be about every disease concerning

which there may be no disagreement. For example, let us note phthisis pulmonalis, which to-day is receiving much attention at the hands of physicians, and concerning which Dr. Watson, secretary of the New Hampshire State Board of Health, discoursed learnedly and eloquently at a meeting recently held at the Weirs.

All concur with the broadcast statements as regards the fatal ravages and dreadful havoc of consumption, even though the facts be heralded by the advertisements of the unscrupulous quack and charlatan. There is no ground for contention here. But the etiology and treatment of phthisis seem ever pressing to the front.

You, my younger brethren, are to go out into the world as independent thinkers. Conflicting ideas and theories will crowd hard upon you. Your teachers have faithfully performed their duty, but they can only blaze the path for you from their present standpoint, as changes are constantly taking place.

What is the etiology of phthisis pulmonalis? By far the majority will be arrayed upon the side of the bacteriologist, who latterly has been accounting for all, or nearly all, of the diseased conditions of the human economy. If to one representative class we propound the above question, back will come the answer that the bacillus tuberculosis is the sole cause of phthisis, and that there is no tendency to-day among the profession to drift away from this theory, but that the exact relation of the bacillus to the pathological process is more accurately and definitely understood than ever before.

A trifle more conservative element would say that in general this question might be answered in the negative, there being three factors in the production of the disease, viz., progressive mal-nutrition, some one of the causes of inflammation, and the introduction of the tubercle bacillus. But, as the tubercle bacillus is the only thing which stamps the disease as a tubercular process, it must be regarded as an essential etiological factor, and without it there can be no tuberculosis.

Another section of scientific workers would answer that the bacillus is not the sole cause of phthisis, but only a part of the life-history of certain microscopic plants in the system; and

still another class of workers would contend for a purely neurotic origin of phthisis.

You have been well drilled by your instructors in bacteriology, and no doubt can discuss very understandingly and profitably the different varieties of the micrococci, the bacilli, and the spirilla; can point out their many and varied ways of attacking and entering the citadel of the human body, and vividly portray their numerous encounters with the bacteria-devouring phagocyte, detailing the defeats which they suffer at his hands, thus rendering the system for the time immune against them.

So I will devote a few moments to theories other than bacterial concerning the etiology of phthisis, which as independent thinkers you will be called upon to dispose of.

First, I would direct your attention to the theory of the fermentative origin of consumption, as promulgated by Drs. Ephraim and John A. Cutler of New York. They think that many do *not* accept the bacillus theory, and regard the bacillus as a part only of the life-history of the mycoderma aceti plant, and that the cause lies in the small intestines. That tuberculosis is at the onset a systemic disease, due to the presence of yeast in the blood, which is introduced through the alimentary canal from starch and sugar in excess, and in a fermentative state. The blood under the microscope discloses spores of vinegar yeast, fibrin filaments, enlarged white corpuscles, the red discs lessened in number and changed in appearance, and various thrombi. The process may be latent, and may be inherited, and this pretubercular state exists usually a year before organic diseases become manifest. They regard tubercle as a secondary product, and cite food as the great cause of tuberculosis. Treatment, of course, consists of ridding the blood of this yeast by a kind of starvation, and submitting the patient to a rigid diet of animal food. They emphasize the fact that tuberculosis does not exist among the residents of Arctic regions, though they breathe impure air. They live on animal food, and are free from tubercle. They claim cures of phthisis before Koch's time, having photographed the morphology of the blood nearly twenty years ago. This examination of the blood discloses the pretubercular stage, from which,

under appropriate treatment, all should recover, because there has been no destruction of tissue. Complaint is made of bacteriology in that it is only a small part of the micrological world and no cures have been effected by it. "If the proofs were to be placed entirely upon the results," they say, "then bacteriology must hold its head in shame. But we are willing to controvert Koch on scientific grounds, and maintain the position that he has told but one half the story: that botanists have been fighting for years as to whether bacteria were simply babies of the fuller fledged vegetations; that the bacillus was photographed in 1876; that the ability to diagnosticate pre-tuberculosis and tuberculosis by blood examinations, and the means thus afforded of watching the cases, are worth immeasurably more than the diagnosis of consumption when the disease is apparent to all."

"Phthisis a Neurosis" is ably championed by Thos. J. Mays, M. D., of Philadelphia. His treatise on "Pulmonary Consumption, a Nervous Disease," and supplementary writings, are ingenious defences of his well-wrought theory. His study of this theory has extended over eight years, and he believes that it better accounts for the existence of phthisis than anything else, and that the theory is in perfect harmony with the therapeutic indications of the disease, as there is no specific treatment, and never will be except that which strives to support the nervous system and the constitution of the patient.

In a masterly and convincing manner he originates the disease in the vagus nerve, and establishes by authorities cited, and many tabulated cases, the relation existing between consumption, syphilis, epilepsy, diabetes, leprosy, insanity, hysteria, neuralgia, and other nervous affections. He does not hesitate to affirm that the bacillus has never been proven to give rise to phthisis as it is found in the human subject. It is admitted that tuberculosis may be produced by inoculation in the lower animals, but denied that this is any proof of the same thing taking place when the disease is produced in a natural way. "Nature," he says, "does not go around and inject the bacilli into people with a syringe." The artificial and natural production of consumption are two different things entirely.

The fact is cited that the great majority of cases of phthisis begin as catarrhal pneumonia, and not as a tuberculosis.

Dr. Mays does not believe that the bacillus causes phthisis by inhalation or ingestion, although he admits that certain cases of acute miliary tuberculosis arise through infection, not from outside, but a true auto-infection. Whenever caseation occurs in the body as a result of inflammation, a virus may be produced which is capable of giving rise to true tubercle. He goes on to say that this virus may be, and he thinks probably is, the bacillus. This auto-infection occurs in a limited degree around lung cavities which result from caseous degeneration.

As Dr. Mays believes that disease of the pneumogastric nerves is the fundamental lesion in phthisis, I took the liberty to ask him whether the presence of the bacillus tuberculosis in the system might not be responsible for such lesion. This he cannot for a moment entertain, and says: "Given a cause which will produce degeneration in the vagi, and *phthisis* may occur, but *lung* disease in *some* form will *always* occur. This has been proven beyond a doubt. The bacilli are a mere product. Why, if the bacilli are the cause of phthisis, should they seek only those who have a broken-down nervous system, and infect them? Why should they select the insane and idiotic, who nearly all die of phthisis? Why should they pick out the hysterical, the epileptic, the asthmatic, the diabetic, the neurotic, the alcoholic, the syphilitic, lepers, workers in mercury and lead, and leave those entirely unharmed who are constantly exposed to their presence?"

Thus the primary cause of the degeneration of the vagi, he would make due to anything producing a depressing effect through the general system, as grief, worry, mental overwork, disappointment, the diseases mentioned above, and whatever might act directly through the nerves themselves, as pressure of an aneurism, cervical or bronchial glands, weakness caused in children, through diphtheria or scarlatina, while in after years general nervous depression might be super-added.

In short the advocates of this neurotic theory maintain that all diseases have an attendant micro-organism; that the natural is very different from the artificial production of phthisis; that inoculability is no proof of practical contagiousness; that con-

sumption is only contagious on suspicion; that the victims of phthisis bear no correspondence to the number exposed to the bacilli; that all treatment founded on the bacillus theory has failed; that catarrhal phthisis can be produced in animals by section of the pneumogastric; that this nerve is primarily diseased in consumption; and that the neurotic theory shows cause and effect in a more rational way than does any other theory.

Thus we have to-day what might be styled the orthodox bacteriologist on one hand, and the, at present, herterodox opposition on the other hand, which may possibly in turn become orthodox. Not only do we have Mays, the Cutters, and others at the head of formulated theories, but clinical experiences multiply doubters.

Dr. J. H. Woodward, of Burlington, Vt., reports in the *New York Medical Journal* of December 16, 1893, some interesting cases, in which the tubercle bacilli were present, with the attendant symptoms of phthisis, and which were cured by specific treatment. In a very interesting article in the same journal of July 7, 1894, Dr. F. O. Broady of Chicago very plausibly negatives the pathogenic power of bacteria.

Cases are constantly coming under observation in which bacilli are not detected, and which succumb to phthisis, and others in which the bacilli are present which recover. Moreover, some medical journals are characterizing the germ theory and its advocates as "A Menace to Therapeutics," "A Dangerous Fad," "Blind Leaders," and so on.

Once again I note that these pros and cons, these conflicting theories, will arrest your attention as you go out to battle with disease, and must be weighed in the balance of your intelligent and discriminating minds.

I congratulate you to-night, my younger physicians, upon having so fortunately graduated from an institution in which didactic instruction and practical teaching are so well and happily blended, where the science and the art of medicine are so dependent one upon the other, that a full and complete medical education must of necessity result. Your elegant and well-appointed hospital has made this possible. You ought to be proud of this your college, for Dartmouth Medical school is

about a century old, being the fourth in order of institution in this country, while in order of excellence, the purpose will be in the future, as it has been in the past, to make it second to none.

As you go forth, gentlemen, the field of your professional life may appear in the distance to be full of sunshine and flowers, but be not deceived. There will be many a cloud to darken your way, many a brier to fret you. So you must not lack courage. There is no room for half-heartedness in your chosen profession. “Whatsoever thy hand findeth to do, do it with thy might,” and “Whatever is worth doing at all is worth doing well.” It is said that the contract for the erection of Sir Walter Scott’s monument was awarded to a common carpenter. Why? When a small boy, the great poet did him a kindly act which filled his young heart with pride. He never forgot it, and when years after the bids for plans were called for, *his* was the outcome of labor with the whole heart put into it. *He* had an interest his competitors knew not of, and did not share, and was successful. It will make a vast difference as regards your success whether your whole heart is in sympathy with your life work.

“There is no royal road to success,” is a hackneyed phrase, but a true one, and for most of us there is no short road either. Nearly all of the leaders in the profession have had to be content with slow promotion after years of hard work and patient waiting. But don’t give up. Pluck and energy will bring success.

I recognize the fact that there is no profession or calling in which so much apparently unrewarded bravery and courage in the discharge of duty is displayed, as in that you have chosen. Do your duty as unconsciously as did the English sentry in the Crimean War. The Russians had driven out the men on guard, but were in turn pressed back, and the English re-occupied their defences. The story is this: “On the extreme left of the parallel, where it dipped down into a ravine, an English sentry was found at his post, where he had remained during the Russian assault and occupation. They had not spread out so as to reach his post, though they had gone very near it. His comrades had fled in a panic, and he knew that

he was in danger of being surrounded and taken prisoner. But he stood there, waiting to be attacked before he retreated. When discovered by his comrades he was coolly looking over the parapet toward the Redan, he having been ordered to watch that Russian work. On being asked why he did not run when the others did, he answered that he had been posted there by his officer, and could not leave his post until relieved or driven away by the enemy. ‘His coolness and high sense of duty,’ writes Lord Wolseley, ‘made a deep impression upon my young mind at the time. No marshal’s baton was in his knapsack ; he expected nothing ; he got nothing. It was by accident only that his gallant conduct on that dark winter’s night was ever known to any one ; but he must have had the satisfactory consciousness in his heart that he had done his duty.’” Many are the brave and heroic deeds which are never heard of.

You will be often called upon to see others pass through trials and sorrows after all you have been able to do has been done. Learn to speak the kindly word of sympathy and encouragement. It has been said that you cannot sweep the dark out of a room, but that will not deter you from opening up the windows and doors, that the sunshine of cheer and hope shall flood the place.

Life has many great possibilities ; make some of them yours. Don’t get careless. Do not strive to become famous. If you have worth, the world will make a note of it, and in some way, and sometime, you will reap your reward.

Early in your professional career assume the right attitude towards your brethren and patients, and you will be apt to maintain it, for “Whatever temper of mind we choose will surely become chronic in time, and will be known to those among whom we live, as *our* temper, as distinguished from the tempers of other people.”

Some complain of quackery. A theory exists that when those of the world who are well to do, and in high stations, are welded together to alleviate the condition of the unfortunate and suffering, the crime and poverty of the lower classes will disappear. So, if the noble and good of high aims in our profession will truly unite, the charlatan will be driven from

the face of the earth. This can be done when every physician is, as the late Dr. Flint would have him be, "A thorough gentleman, a thorough business man, and a thorough physician."

Finally, the whole great question of your *true* success in your chosen profession, is involved in the entire possession of your own selves. When the myriad of temptations incident to your career press hard upon you, withstand them like men made acquainted with self from on high. And when brought before the last and greatest tribunal, where justice unwarped is meted out, you will not shrink from the verdict.

## REPORTS.

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### REPORT OF THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

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BY FRANK BLAISDELL, M. D., GOFFSTOWN.

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*Fellows of the New Hampshire Medical Society:* As your delegate to the forty-sixth annual meeting of the American Medical Association held in Baltimore, Md., from May 7-10, I have to report a meeting both enjoyable and instructive. I do not know that this particular meeting was better than its predecessors but it was a good one and one full of stimulus and inspiration to any one who loves his work and is trying to get up in his profession. It is not the hearing of the many papers, able as they were, that stirs one as much as the splendid personality of the men that are the life of this association which helps one up to see the men who are giving America its standing as the nation which is giving to the world to-day more practical results and better clinical teaching than any other nation on the face of the earth. For much as I admire the patient pathological work of our German brothers, and I bow with a feeling of gratitude to their great achievements, or as much as I respect the work of our colleagues of England, yet I claim that in the practical application of these discoveries to the saving of human life and the relief of human suffering our country is without a peer, and it is with gratification that I can say New England is doing her share of this work, and even in our loved New Hampshire there is being done, silently perhaps and less known, yet as strong thinking and with as good results as in the South or West.

The papers were too numerous to give a report upon, as you

will find as you see them in your journals, yet I cannot help alluding to the opening address of Donald McLean, and the papers of N. S. Davis and Nicholas Senn of Chicago, and of the papers upon abdominal work in which I was particularly interested and with which section I spent most of my time, and I also speak with much pride of New Hampshire's able and distinguished representative, the secretary of this society, Dr. G. P. Conn.

The meeting was held in Baltimore's Music hall, a place remarkably adapted for it, and the physicians of Baltimore had made excellent arrangements for the comfort and convenience of her guests. The hospitals, the clubs, and the private houses threw open their doors, and the thanks of all of us are due to Baltimore for her entertainment.

In conclusion, let me urge upon all of you the importance of attending these meetings. You will, through your association with the men who compose it, get a help and strength which will go with you the rest of the year. You will take a renewed interest in the utterances of these men through an acquaintance with their personality, and you will help New Hampshire take the place she deserves among her sisters of the South and West.

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#### REPORT OF THE MAINE MEDICAL SOCIETY.

*Mr. President and Fellows of New Hampshire Medical Society:* As delegates to the Maine Medical Society, we arrived in Portland at noon of the first day of the session. After dinner we repaired to the chamber of the Common Council, City building, where the meeting was held. Here a goodly number of medical men of the state were gathered, and we found no difficulty in presenting our credentials to the proper officers, receiving a cordial welcome individually. At the opening of the afternoon session we were informally introduced to the society and invited to participate in the deliberations.

An interesting programme was arranged, and the various subjects were treated with a candor and earnestness and force-

fulness creditable in the highest degree to the participants, and reflecting much credit upon the society, that it is able to bring its best men to the front.

Appended are some of the more interesting papers read and discussed: "Neurasthenia," by Dr. W. F. Hart, Camden; "White's Operation for Hypertrophial Prostate," (castration as a remedy), Dr. F. C. Thayer, Waterville; "Vaginal Hysterectomy," Dr. W. K. Oakes, Auburn; "Pyosalpinx," Dr. J. F. Thompson, Portland; "Hennequin's Method of Treating Fractures of the Thigh and Both Bones of Leg," with apparatus exhibited, Dr. Alfred King, Portland; "A Case of Myxoedema Successfully Treated with Desiccated Thyroid," (patient present), Dr. J. K. P. Rogers, South Portland; "Tuberculosis of the Knee Joint—Excision" (patient present), Dr. S. H. Weeks, Portland; "Dietetic Treatment of the First Stages of Phthisis," Dr. J. F. DeCosta, Buckfield.

One thing that impressed your delegates (and perhaps could be profitably copied at home) was the absence of a selected participant to open the discussions; one who, by virtue of his connection with the subject to be discussed, is in a position to exhaust the matter, thus leaving nothing but a barren waste for whomever might otherwise follow.

A word might be said of the place of the meeting, the Common Council chamber; a room nicely furnished with carpet, chairs, and desks arranged on three sides of the president's chair, with a nearness that suggests a common interest of all members in the subject matter of the essayist.

Like our society meetings, their first day is their best day, and to maintain a full attendance, to the last echo, is impossible with busy practitioners.

As a whole, the Maine Medical meeting was a grand success from every point of observation. A good attendance, good papers and discussions, good fellowship, and an evidence of progress prevailed during their entire session, and fortunate do we count ourselves that we were delegated as your representatives.

Respectfully submitted,

T. S. FOSTER.

G. W. McGREGOR.

## REPORT OF CHESHIRE COUNTY MEDICAL SOCIETY.

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BY S. M. DINSMOOR, M. D., SECRETARY.

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The Society has held three meetings during the year, all of which were held at City hotel, Keene.

At the annual meeting in October the following officers were elected for the ensuing year :

*President*.—Dr. Geo. I. Cutter, West Swanzey.

*Vice-President*.—Dr. J. B. Hyland, Keene.

*Secretary and Treasurer*.—Dr. S. M. Dinsmoor, Keene.

Dr. Wm. E. Maloney of Keene presented a patient before the Society, from whom he had removed the gall-bladder a few weeks before. He gave a detailed account of the operation, also the previous history of the case, which rendered operative procedure necessary. Much interest was manifested in this case, as it was believed to be the first operation of the kind ever done in New Hampshire. The patient made a good recovery, and has since enjoyed good health.

Dr. I. J. Prouty of Keene presented a carefully prepared paper on "Prostatic Hypertrophy," and gave in detail the operation, which he had performed in two cases of this disease. Dr. Prouty used the supra pubic operation, with application of thermo-cautery to gland, in addition to such dilatation of the urethra as appeared necessary. Good results were claimed for this operation, the patients being entirely relieved from all distressing symptoms.

Discussion followed by nearly all present.

Appropriate resolutions were passed in relation to Dr. Arthur B. Thurston, whose death had recently occurred from typhoid fever.

At the winter meeting held in February, Dr. A. P. Richardson of Walpole presented an interesting paper on "Entozoa," in which he detailed at length his experience in dealing with intestinal parasites, and showed quite a number of specimens

of the different varieties, and the methods which he had used for their expulsion.

Dr. J. B. Hyland of Keene reported a case of stricture of the urethra of long standing, in which he had performed external urethrotomy with satisfactory results, urine passing freely and naturally in four weeks after the operation.

At the afternoon session a lecture was given by Dr. Eugene Wason of Milford, on "Advances in Obstetrics within the Last Twenty-five Years." Reports of other cases of interest given by different members.

At the spring meeting Dr. Stone of Troy and Dr. Prouty of Keene each presented papers on "Diphtheria," having special reference to the new anti-toxin treatment, and detailing several cases, showing temperature charts, etc., where it had been tried with satisfactory results.

Dr. Cutler of West Swanzey presented an excellent paper on "Influenza," and reported in detail several cases occurring in his practice, presenting unusual symptoms and sequelae. Cases of interest were reported by several physicians, followed by general discussion.

Dr. Frank M. Dinsmoor of Keene was elected to membership by unanimous vote.

The meetings of the year have been as well attended, and of as much interest and value, as in any previous year.

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#### REPORT OF CARROLL COUNTY MEDICAL SOCIETY.

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BY E. B. ANDREWS, M. D., SECRETARY.

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The twelfth annual meeting of the Carroll County Medical Society was held at the court house, Ossipee, June 26, 1895.

The President being absent, the Vice-President, George W. Lougee of Freedom, occupied the chair.

The following members were present: Drs. J. W. Dearborn, J. Starr Barker, Parsonsfield, Me.; Drs. A. D. Merrow, George W. Lougee, Freedom; Drs. E. W. Hodsdon, F. E.

Bryar, Sandwich; Dr. H. I. Berry, Wolfeborough; Dr. E. B. Andrews, Ossipee.

The report of the Secretary, E. B. Andrews, was read and accepted.

The name of Dr. F. E. Bryar of North Sandwich having been proposed by Dr. Hodsdon and recommended by the Council, it was unanimously voted he become a member of the society.

The following officers were elected:

*President*.—George W. Lougee, Freedom.

*Vice-President*.—H. I. Berry, Wolfeborough.

*Treasurer*.—N. H. Scott, Wolfeborough.

*Secretary*.—E. B. Andrews, Ossipee.

*Censors*.—E. W. Hodsdon, Sandwich; F. E. Bryar, Sandwich; A. D. Merrow, Freedom.

*Council*.—J. Starr Barker, Parsonsfield, Me.; H. I. Berry, Wolfeborough; W. S. Davis, Sanbornville.

It was voted that Drs. H. I. Berry, N. H. Scott, and C. B. Cotton act as a committee to draft resolutions on the death of Dr. Thomas E. Hubbard of Rochester, a copy of which to be sent to the widow, the Secretary of this Society, and the Carroll county papers.

It was voted that Drs. Berry, Scott, and Cotton be a committee to decide on the time and place of a semi-annual meeting to be holden some time in September. This committee were authorized to procure suitable notices and entertainment for this meeting.

The Council appointed the following members to read papers at the semi-annual meeting: Drs. A. D. Merrow, Freedom; N. H. Scott, Wolfeborough; topics to be of their own selection.

Drs. F. E. Bryar, Sandwich, E. W. Hodsdon, Sandwich, and George W. Lougee, Freedom, were appointed to read papers at the next annual meeting.

Dr. George W. Lougee reported a case of hysterectomy.

Dr. J. W. Dearborn reported a case of appendicitis.

Dr. A. D. Merrow reported a case of miscarriage with retained placenta.

Adjourned.

## REPORT OF THE STRAFFORD COUNTY MEDICAL SOCIETY.

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BY A. NOEL SMITH, M. D.

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DOVER, N. H., June 3, 1895.

To G. P. CONN, M. D.,

*Secretary New Hampshire Medical Society.*

SIR:—It devolves upon me as delegate of the New Hampshire Medical Society to Dartmouth Medical College to present a report at this time.

The final examinations (oral) of the 1894 graduating class took place on the 19th and 20th of November, 1894, at Hanover, N. H. Dr. John B. Wheeler of Burlington, and Dr. Joseph W. Jackson of Barre, Vt., were present as delegates from their state society, and rendered valuable assistance in conducting the examinations. Much to our regret, Dr. Ira H. Adams, associate delegate from New Hampshire, was detained at home on account of personal illness.

Early in the term there was promise of a large graduating class, viz.: forty-five. But as the time neared its close there was a frightful mortality in the ranks, so that only thirty came before the delegates, twenty-eight of whom were awarded diplomas.

The promptness and intelligence which characterized the answers to the questions propounded, were creditable proof of the faithfulness of both instructors and students.

The well-known and often tested hospitality of the faculty was again ours to enjoy, for which we herewith express our thanks.

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REPORT OF THE CENSORS.

CONCORD, N. H., June 3, 1895.

*Honorable Council, New Hampshire Medical Society.*

GENTLEMEN:—The board of censors of the New Hampshire Medical Society has the honor to report: six licenses to practice medicine in this state have been granted, viz.:

1. July 18, 1894, Charles H. Boodey, New Durham, graduated from Bowdoin Medical College, 1875. (By Dr. Parsons.)
2. October 24, 1894, Frederick S. Towle, Portsmouth, graduated from Medical Department, Columbian University, Washington, D. C., May 4, 1893. (By Dr. Parsons.)
3. January 4, 1895, Benjamin H. Holmes, Portsmouth, graduated from Jefferson Medical College, May 9, 1894. (By Dr. Parsons.)
4. May 3, 1895, Frank M. Dinsmore, Keene, graduated from University of Pennsylvania 1893. (By Dr. Hiland.)
5. May 17, 1895, Halbert L. Waterman, Fitzwilliam, graduated from University City of New York, 1892. (By Dr. Hiland.)
6. May 17, 1895, Robert Freeman Oliver, Alstead, graduated from Medical Department, University of Vermont, July 14, 1890. (By Dr. Hiland.)

I enclose the fees for licenses, six dollars.

Very respectfully, your obedient servant,

T. HILAND,

*Sec'y Board of Censors, N. H. Med. Society.*

## OBITUARIES.

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### WILLARD D. CHASE, M. D.

Dr. Chase died at Peterborough on the third day of September, 1894. He was born in Claremont, N. H., December 4, 1836, and was the son of Willard W. and Maria Chase. He was educated at the district school and academy in his native town, and at the age of twenty years, entered the drug-store of Edwin Ainsworth of Claremont as a clerk and student. He commenced the study of medicine four years later under the instruction of Drs. S. G. Jarvis and C. A. Volk of that town. He attended lectures at the Dartmouth Medical College and at Harvard University, receiving his degree from the latter institution in 1866. He immediately commenced the practice of his profession in Greenfield, N. H. After remaining there two years, he removed to Peterborough in 1868, where he practised his profession until his death.

In December, 1869, he married Josephine L., daughter of Moses Clark, Esq., of Wilton, who, with one daughter, Mrs. Blanche M. Peare, survives him.

Dr. Chase was a faithful, painstaking physician and a constant student not only of his profession but of general literature. He was an enterprising and valued citizen, and held many offices of honor and responsibility. At the time of his death, he was a trustee of the Peterborough Savings Bank and clerk of the Peterborough Improvement Company. He served as an efficient member of the board of education, and was a representative to the legislature in 1889.

For more than twenty-five years he was a member of Altemont Masonic Lodge, of which organization he was past master. Although not a member of any church, he was a liberal

supporter of the Unitarian church and a constant attendant there.

No one ever sought his advice, friendship, or medical aid in vain. He was a friend to all classes and at his death all classes were sincere mourners.

C. J. A.

#### THOMAS B. SANBORN, M. D.

He was born in Newport, N. H., July 9, 1852, being the son of Dr. Thomas Sanborn and Harriet Allen. He was educated at Colby Academy in New London, studied his profession with his father and graduated at the Bellevue Hospital Medical College. Taking the office of his father who had died about one year before, he commenced practice in Newport in 1877, where he soon acquired an extensive and enviable reputation in his profession. Being of a kindly, genial, and sympathetic nature, "Dr. Tom," as he was familiarly called, was a welcome visitor at every bedside. Although skilled in general practice he was specially interested in surgery, in which specialty he achieved many successes. He never married, but lived in happy relationship with his mother and younger sister. He was a member of the board of United States examining surgeons and of the local board of health. He was also a member of the various Masonic orders, including the Odd Fellows and Knights Templars, and moreover represented the town of Newport in the legislature of 1880.

He was cut off before the meridian of life and usefulness had hardly been reached, his death, which occurred June 30, 1894, being the result of an abdominal affection which was probably appendicitis.

D. M. C.

## ISAAC NEWTON FOX, M. D.

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BY HAVEN PALMER, M. D., PLYMOUTH.

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Dr. Fox was the son of Isaac and Hattie Connor Fox, and was born at Woodstock, N. H., March 1, 1862.

He received his medical degree at Burlington, Vt., July 15, 1889, and very soon after commenced the practice of his profession at Rumney, N. H., becoming a member of the New Hampshire Medical Society in 1891. He was married February 22, 1893, to Miss Mary Asenath Sweat of Rumney. After about five years of successful practice in this town he returned to Woodstock, where almost immediately he found upon his hands a large and lucrative as well as arduous business. Here his professional career, although highly satisfactory and successful, was brief, for in less than one year he was called from labor.

He died March 2, 1895, from an attack of acute lobar pneumonia, caused doubtless by exposure and hard work.

Dr. Fox was an earnest and conscientious practitioner. He was thoroughly devoted to his profession, and looked forward with pleasure to a life of work and progress therein. A thorough and laborious student, he sought his books for knowledge, for pleasure, and for rest. Had he a difficult case his books were his council. Had he leisure his books were his companions and a source of comfort.

He had more than ordinary musical talent, and in later years was always leader in the church choir. He also wielded the crayon with enviable skill, to which many portraits in the homes of his friends bear testimony, and around which cling tenderest memories.

His conduct and character were above suspicion. He was a member of the Baptist church, and a very active member of the Society of Christian Endeavor.

He was peculiarly fitted to enjoy life, and did enjoy it far more than the average man. He loved his profession; he was

happily married ; and he loved church work. To him religion was a reality, and for him music and art had superlative charms.

Although his professional career was short, his patrons, who in the last year of his life were numerous, had learned to place confidence in his ability and were content under his pains-taking care.

Charitable and unselfish beyond measure, the kindly deeds which are too numerous to record, the gentle and dignified bearing, the face, the form, and the name of Isaac Newton Fox will not be forgotten by this generation.

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JOHN L. McGREGOR, M. D.

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BY G. W. MC GREGOR, M. D.

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John Loma McGregor, M. D., was born in Whitefield, N. H., September 5, 1855, and died April 17, 1895, of general tuberculosis.

Bereft of his father at an early age, he soon went to live with a maternal uncle, Dr. George S. Gove, where he enjoyed the privilege of a home about three years.

After completing his studies at the village school, he entered the department of agriculture at Dartmouth College, where he received the degree of B. S., in 1875.

In the fall of 1876 he matriculated at the Medical College at Hanover ; but before the close of the term, went to Philadelphia, entered the Dental school, receiving a diploma in 1877.

Returning to Whitefield he opened an office ; and in 1878 purchased a pharmacy which he managed in connection with dentistry until the spring of 1883, when he received the degree of M. D., from the Hahneman Medical College in Philadelphia. He again returned to his native town, and began the practice of medicine, under the homoeopathic banner.

Very soon he found that its dogmatic teachings were not in accord with a broad and progressive ambition ; and to satisfy

his own conscience, he must get up on higher ground; so, when but a Hahnemanian infant of eighteen months, he returned once more to Hanover, graduating from its Medical College in 1884, well equipped for a brilliant and successful career.

Respected and admired from boyhood, he no sooner hung out his sign than a lucrative practice began, which continued until failing health and a desire to go abroad impelled him to take an ocean voyage to recuperate, both physically and professionally. This was in 1891, and after five months in the British Isles he returned to resume his practice; but not with renewed health.

In January, 1894, he gave up practice, and a little later had an operation for fistula in ano, unsuccessful in results, because, being tubercular, it never healed; and suffering also from a pulmonary tuberculosis, the fight was an uneven one, and he went down after a stubborn battle with the relentless foe.

In 1879 he married Miss Davis of Bethlehem, by whom he had three children, and who, with two children, survives him.

Of a nervous temperament he was alert, quick to discern, bright in repartee, jovial in spirit, with a magnetic presence that charmed and inspired all with whom he came in contact. Animated with an indomitable disposition, and wholly unmindful of self, his own health was neglected until nothing could avert the inscrutable dictum of Old Father Time.

He was a member of the Odd Fellows craft, Knights of Pythias, and Masonic fraternity, each of which was fitly represented at the funeral obsequies, to which the surrounding communities turned out en masse.

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#### CHARLES PINCKNEY GAGE, M. D.

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BY FRANK P. FOSTER, M. D., NEW YORK.

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*Mr. President and Gentlemen of the New Hampshire Medical Society:—*When a man of note in a community has been called away by the last earthly summons, those whom he

has left behind review his career and reflect upon his virtues in their own minds as individuals. But this is not all that is thought fitting; among every people, even in the absence of civilization, those who share in a sorrow seek to give common expression to their feelings by assembling and listening to some account of the life and character of the departed. Being universal, this desire must be intimately connected with the very core of human nature, must be good and wholesome in its tendency. Fortunately, its satisfaction does not depend wholly on the competence of him who speaks the words; else you would have taken care to choose somebody abler than I to speak to you on this occasion. You are assembled to pay the last tribute to a man who was distinguished among you, and I, his friend and once his pupil, am here to cast in my mite, around which, as around a tiny snowball, you will mentally roll a wealth of reminiscences that will form in the aggregate an immaterial monument proportionate to the virtues of him whose memory we are here to honor.

Charles Pinckney Gage was born in the adjoining town of Hopkinton on the 5th of April, 1811, on the same farm on which, in 1780, his father, John Gage, had been born. His mother was Sally Bickford, a daughter of Thomas and Abigail (Eastman) Bickford. Dr. Gage's paternal grandparents, John and Elizabeth (Fowler) Gage, came to Hopkinton from Bradford, Mass., sometime prior to the year 1750, and at about the same time his maternal grandparents, Thomas and Abigail (Eastman) Bickford, came to the same town from Newburyport, Mass. It is recorded of Thomas Bickford that he was a Revolutionary soldier. He whose ancestors dwelt on American soil so far back as in the time of the Revolution, especially if any of them took part in that grand uprising on which so much of what is best in the world's subsequent history hinges, does not usually concern himself about his remote ancestry; he is content that his title to be called a genuine American is indisputable. We have traced Dr. Gage's progenitors back to that period; let us not seek to explore antiquity further.

To John Gage, the second, and Sally, his wife, there were born five children, the first of whom, a girl, died in infancy. Charles Pinckney was the second child, and his brother, Stil-

man, and his two surviving sisters, Laura and Amanda, lived to an advanced age. In accordance with the custom then and now widespread of bestowing upon a son the name of some distinguished compatriot, the name of Pinckney was given to Dr. Gage in honor of Charles Cotesworth Pinckney, of South Carolina, one of those sturdy envoys to Paris, who, in 1797, when Talleyrand's secret agent, at a conference understood by them to be held honestly for the purpose of averting an aggressive war by France upon the infant and unoffending United States, said,—“Gentlemen, you mistake the point: you say nothing of the money you are to give—you make no offer of money—on that point you are not explicit!” replied,—“We are explicit enough: we will not give you one farthing, and before coming here we should have thought such an offer as you now propose would have been regarded as a mortal insult.”

When Charles Pinckney Gage was ten years old, his father was taken ill with pulmonary consumption. The fatal course of this illness was of three years' duration, for all but the first year of which the victim was confined within doors. “From the time my father was taken sick,” writes Dr. Gage, “I was the only one my mother had to depend on to do anything about the farm. The first year after father died she let the farm to Moses Harris; the second year, not being satisfied with Harris, she took charge of it herself, and hired help to assist me, and from that time we managed it alone. I used to do what I could on the farm and attend school—in the winter on the hill and in the Story district, and in the spring and fall at Ballard’s and the academy in the village. While attending school I had to do errands, take care of the stock, get wood and water, and do the thousand little jobs about the house and farm.” The Ballard mentioned was John Osgood Ballard, his tutor.

When young Gage was eighteen years old he resorted to that unpleasant but most wholesome aid to the pursuit of an education—school-teaching. It was probably at about this time that he joined the Hopkinton Light Infantry, a force of sixty-four men, of which he was orderly sergeant. He was one of eight of the sixty-four who were over six feet in stature.

In 1893 he thought himself the only survivor of this body of militia.

He taught school in Hopkinton for three successive winters, but while in attendance at school, whether as a teacher or as a pupil, he kept to his work on the farm up to the very time of his beginning the study of medicine in 1834. When he was thirteen years old, the eldest of five children, he had promised his dying father that he would do his best to fill his place in the family. "It was not until my father was eighty years of age," writes his daughter, Mrs. Morrill, "that he accomplished this dying request of his father's, giving without stint his time, strength, and money, helping each one generously, until the last member of his family passed away." What a burden to be borne for sixty-seven years, and how unostentatiously, even silently, he bore it!

We now come to his undertaking the great work of his life, the study, and practice, and teaching of medicine. Many of us are prone, I think, to take too depreciatory a view of the facilities for medical education possessed by our country in the first half of the century. The medical schools were, to be sure, destitute of the costly appliances that are now brought into play in all our great cities, and clinical teaching, so far as it existed at all, was little more than a plan—conscientious, no doubt, but utterly unscientific and delusive—to make the facts tally with the professor's reading, and with his ingenious evolution of theories; but "there were giants in those days," as we shall see, and Dr. Gage sat at the feet of more than one Gamaliel, moreover, the family doctor really did then what a preceptor ought to do for his private students. He may not have been learned in pathology or skilled in physical diagnosis, but according to his lights he strove to manage disease and soothe and comfort the sick, and he taught his students his methods in the concrete.

It was in the spring of 1834, when he was twenty-three years old, that Dr. Gage began the study of medicine. His preceptor was Dr. Royal Call of Hopkinton. He attended two courses of lectures at Hanover, a course at Woodstock, Vt., a course at Pittsfield, Mass., parts of a course in Geneva, N. Y., and three courses in Cincinnati. He received his medical

degree in February, 1837, from the Cincinnati Medical College. At Woodstock he became the private pupil of the late Dr. Willard Parker, for whom he conceived and ever maintained a most ardent admiration. Parker went from one medical college to another, lecturing on surgery and rapidly rising to fame, and Gage naturally went with him. This accounts for his pursuing his professional studies at so many different places. Whatever town contained Parker was for him—aye, and for many another student, not only in those days, but for a long period subsequently—the medical capital of the country. Parker was his idol, but there were other eminent men among his teachers, and he always spoke of them with the profoundest respect. Among them were Reuben D. Mussey, Robert Watts, Henry Childs, Elisha Bartlett, Samuel D. Gross, and Daniel Drake. Among those of his fellow students who subsequently became famous were Oliver Wendell Holmes and Henry Kirke Brown. Brown, who afterwards achieved eminence as a sculptor, was studying artistic anatomy. There seems to have been something closer than an ordinary friendly acquaintance between Gage and Brown, for it is recorded that in 1837 the young artist, at his own request, painted Gage's portrait, and it was an excellent likeness.

As was the custom in those days, during the latter months of his last year as a candidate for the medical degree he did some practice, and after his graduation he practised in Cincinnati for about a year. He seems to have had a great liking for Cincinnati, but his health was not good while he was there, and he finally concluded that he must settle in some other place. He visited various towns in New Hampshire with an eye to their eligibility, but could find no place that suited him like Cincinnati, to which city he returned for a brief period. Sickness again led him to come East, and at last he settled in Concord, in July, 1838. In October of the same year, according to his memory (in the following year, according to the society's records), he joined the New Hampshire Medical Society.

Meantime, on August 27, 1837, he had married Nancy George Sibley, a daughter of Stephen Sibley—dear old Stephen Sibley—of Hopkinton. The newly married pair made their

wedding tour to the White Mountains, in their own carriage. Everybody who knew Mrs. Gage speaks of her as an exceptionally refined and attractive woman. Poor creature! Not many months passed after her marriage before she began to show signs of a mental malady that before long required her seclusion, her separation from her husband and children, the desolation of her home. Sad is the story, and gladly should I have avoided all allusion to it, but it is necessary to a proper appreciation of Dr. Gage's character and career that some mention should be made of his wife's affliction and of the subsequent grievous blight that fell upon his son's promising young life. Writing very recently, his daughter, Mrs. Morrill, says: "My mother was liberated from her bondage of forty years by her death, on October 10, 1887. In the spring of the following year my father's only son was taken to fill her unhappy place." We can see nothing but darkness in all this, but the ways of Providence, inscrutable as they are at times, are always for our ultimate good. Certainly in this instance Dr. Gage's long and honorable career shines with added lustre when we call to mind how, at the close of each day's work, he came back to a home no longer gladdened by the presence of his chosen helpmeet, and how in his declining years the second disappointment broke upon him.

When Charles Pinckney Gage came to practice in Concord, then a much smaller town than it is now, he brought an educational outfit far in advance of that usually enjoyed by the country practitioner of those times; yet this fact would not have brought him the prosperity and the leading position that became his in the course of a very few years, had he not had exceptional natural gifts, for he had to compete with the venerable Peter Renton, who had been educated in Edinburgh, then the medical Mecca; with the learned, astute, and courtly Ezra Carter; and with the energetic Timothy Haynes. Dr. Gage's practice soon grew amazingly, not only in the town, but in the surrounding country. He had patients in every town in Merrimack county, and, indeed, after the building of railroads, it was not a very uncommon thing for him to be called into the neighboring states of Maine, Vermont, and Massachusetts. What he did with his own horses was pro-

digious. An account was kept of the distances driven by him for a month, and it was found that on an average he drove seventy-five miles a day. In his busiest periods he used three horses all the time, and he always drove his horses singly.

Speaking of horses, no sketch of Dr. Gage's career would be satisfactory that failed to mention his famous horse, Plowjogger. In his prime, Plowjogger was reputed the most valuable horse in the state. Dr. Gage bought him for a very small sum when he was a colt of unknown paternity, foaled by a mare that had been turned out to pasture. He had no other training than he got in Dr. Gage's practice, but he turned out a noted trotter. Dr. Gage once drove with him from Concord to Franklin, made a professional visit to a patient, stopped to take a cup of tea, and drove back to Concord, all within four hours. When the Mexican War broke out, the friends of Gen. Franklin Pierce wanted to buy this horse for him, but the doctor would only lend him for the duration of the war; the general, feeling that he could not undertake to bring him back alive, did not feel at liberty to borrow him. This horse lived to be twenty-eight years old, and in his last years he was not easily outstripped by other horses. Not only was he fleet and enduring; he was exceedingly sagacious. Dr. Gage thought that he had on many occasions saved his life when he was travelling in the night, and I myself can recall a notable instance of Plowjogger's *sabè*. The doctor was accustomed to leave him at a patient's gate without hitching. Plowjogger would usually wait contentedly. On one occasion, however, the doctor staid with his patient longer than Plowjogger thought proper, so he trotted back to the stable, only to find it closed, whereupon he returned to the patient's house and waited for his master.

Dr. Gage did a large practice for many years, but he never charged more than five thousand dollars in a year; how much of this he collected it would now be impossible to say. His largest day's work amounted to seventy dollars. This was on the basis of seventy-five cents for a visit in the daytime, a dollar and a half for a night visit, and usually five dollars for a case of confinement. I hope that the fees have been raised in Concord since those days. With the exception of an occa-

sional absence from home, either for his health, on matters of business, or to gratify his artistic tastes, he was in the harness perpetually; he continued to practise up to the beginning of his last illness. A country doctor, even with a long career, is not likely to have many notable persons as his patients. Dr. Gage seems to have been exceptional in this respect; among his patients were Daniel Webster, Gen. Franklin Pierce, the Hon. John Wentworth, afterward mayor of Chicago, and the celebrated Miss Mitford.

Most young medical graduates have a *p penchant* for surgery. Dr. Gage retained his throughout his career, and for many years he was the leading surgeon of Merrimack county. He was a consummate anatomist and a cool and skilful operator, but conservative surgery was never sacrificed to any over-fondness of his for operating.

As has been mentioned, Dr. Gage joined the New Hampshire Medical Society very early in his career, and at the time of his death he was, with possibly one exception, the oldest member. At various times he filled every office in that society and in the Centre District Medical Society. In 1846 the New Hampshire Medical Society sent him and Dr. R. P. J. Tenney of Pittsfield as their representatives to take part in the convention held in New York for organizing the American Medical Association. He was surgeon of the Governor's Horse Guards, acting surgeon to the First New Hampshire Regiment while in camp at Concord, and for many years a pension examiner.

For a country practitioner Dr. Gage had a remarkable number of students. In his declining years he could recall the names of forty, but he had probably had more, for I have noted the omission of one or more names from his list. I was a student of his for nearly five years, and I know how his preceptorship was prized by my fellow-students and myself; we all revered him and liked him, and he was ever mindful of our needs and considerate of our sentiments. Student life under him was of the old style, to be sure; when we were not working with books, bones, and scalpel we were making pills, powders, decoctions, etc., setting the office in order, or even sawing wood for the office fire. None of us ever thought any of these things a hardship; even when, a callow youth of seven-

teen, I was set to making a pound of Dover's powder out of crude opium, potassium sulphate in crystals, and only the ipecac powdered—the job took me a week—I had no idea of complaining, for was I not learning how the thing ought to be done? Dr. Gage kept us hard at work, but he also entertained us with many a quaint anecdote and took part with us in many a game of old sledge. I believe that all his students look back to their pupilage with him as among the happiest periods of their lives.

Dr. Gage never relaxed his diligence in practice. In his later years he was mostly occupied with consultation work, but he kept at it to the last, and his mind remained sound, even all through his last illness. It was in November last that he finished his earthly work and lay down to undergo the last great change. The end came to him as it comes to but few men—by sheer senility. Old age is not a matter of years alone; he who for far more than the average lifetime has made enormous drafts upon his natural powers, he who has suffered protracted sorrow, is prone to senile decline at a comparatively early period. How natural is it, then, that this mode of dissolution should have happened to Dr. Gage! Still it is noteworthy that the perceptible signs of the impending change should have held off until so near the end.

That eminent surgeon and very philosophical writer, Sir James Paget, in his "Lectures on Surgical Pathology," draws a really attractive picture of death from old age, comparing it to the dropping of a fully ripened fruit, and then, after tracing the purpose of the degenerative processes that go on while life yet endures—namely, to further the assimilation of the organism back to Mother Earth when the final change shall have come—adds these reflections,—“Nor would the student of the design of these degenerations do well to omit all thought of their adaptation, in our own case, to the highest purposes of our existence. When, in the progress of the ‘calm decay’ of age, the outward senses and all the faculties to which they minister grow dim and faint, it may be on purpose that the spirit may be invigorate and undisturbed in the contemplation of the brightening future, that, with daily renewed strength, it may free itself from the encumbrance of all sensuous things,

or may retain only those fragments of thought or intellectual knowledge, which, though gathered upon earth, yet bear the marks of truth, and, being truth, may mingle with the Truth from Heaven and form part of those things in which spirits of infinite purity and knowledge may be exercised."

Most certainly Charles Pinckney Gage went through some such final process of refinement as Paget portrays. In a letter lately written, his daughter, Mrs. Morrill, says, "Several days before he died, of course, he was growing weaker all the time; the last two days he could not articulate, but understood all I said to him. There was something he wanted me to know, for he would often raise his right hand from the bed and point with the index finger out of the window into the sky. I could not find out what it was he wanted me to know—what convey to my mind. Sunday afternoon before he died, Monday morning, I determined to find out if possible. I was afraid something troubled him. I bent my head down close to his, he looking intently in my eyes. 'I said does anything trouble you, father?' He shook his head in the negative. 'Do you see anything that I can't see?' He bowed his head in answer, 'Yes.' 'Can you tell me about it?' A turn of the head, 'No.' 'Is it something beautiful you see?' He bowed his head in answer twice, 'Yes, yes.' 'Shall I know about it sometime?' He bowed his head slowly, 'Yes,' and was so pleased and so relieved, his whole countenance expressing both. After that he pointed no more, and was at rest and content, and peace seemed to be upon him. Now, I think my father saw my mother those several days; that he could see her, but we could not. I believe that the one he had loved when a girl, whose mind was most brilliant and beautiful, was restored to him; that after their separation of fifty years she was waiting for him, and that they were to be reunited." Thus beautifully, on the 26th day of November, closed a career of toil and affliction, borne bravely by a man able to bear them.

In personal appearance, Dr. Gage was to me an exceedingly attractive man; he was handsome and refined of face, majestic in figure, courtly in demeanor. He was thought to bear a strong resemblance to General Houston of Texas. It seems that he once met the general in Washington, and that the two

men were much taken with each other. Dr. Gage's expression was almost always that of good humor, not seldom of jollity, in spite of his constant sorrow. He was keenly appreciative of humor and eminently social in his disposition, a genial and delightful companion. For close on to five years I was intimately associated with him as his pupil, and I say this without any mental reservation whatever. He had his fits of "the blues," to be sure, and when his lower lip was seen to droop, we boys in the office knew that the time was not propitious for our asking favors; but these attacks were rare and brief, usually he was heart and soul with us in all our frolics. He was at his best when he could throw off the cares of practice and give himself up to communion with nature or with his fellow-men. Well do I remember how charming we—that is, several of us students—found him on a little driving tour of several days that we took through Merrimack and Rockingham counties and a short distance into Massachusetts.

There was a great deal of humor in Dr. Gage. Sometimes it showed itself in an innocent little piece of mischief. For example, we were all in the office one afternoon when a violent shower suddenly came up, and persons in the streets were hurrying to places of shelter. There came a ring at the door-bell, and the doctor answered it in person. At the door he found a man, an entire stranger, who asked him if he could tell him where he could find a wet-nurse. At that moment the doctor, who may have been a little nettled at the man's impudence, caught sight of a baker's cart being rapidly driven by. He said to his visitor,—“The man that's driving that cart can tell you.” The driver's name was Nourse, and certainly he was at that moment a wet Nourse.

I have before mentioned dear old Stephen Sibley, the doctor's father-in-law, who lived in the house with him. Dr. Gage frequently gratified his spirit of fun by pretending to find fault with the old gentleman, who, for his part, it must be added, held up his own end bravely. Sometimes the encounters between them were so sharp that a stranger might have thought they were really quarrelling, but we youngsters, who knew how the two men respected and loved each other, appreciated the play. I have known Dr. Gage to amuse himself for

hours bandying words with a cantankerous little Irishman that was a laborer on one of his farms.

Dr. Gage's habits of life were very simple. He was a moderate eater, and ever after a time prior to his graduation he eschewed meat as a rule, although he ate it whenever he found himself so situated that to do otherwise was likely to occasion remark. He based his avoidance of meat on a belief he had formed that, on the whole, he could do more work without it than with it. It was not a matter of sentiment with him, and he never made any profession about it; indeed, so far was he from any such ostentation that it is only since his death that I have learned of it. He rarely, I believe, took any alcoholic drink—hardly ever any stronger than cider.

Dr. Gage was an enthusiastic lover of nature, and he had excellent taste in literature and the fine arts. The practice of his profession gave him ample opportunities of indulging his fondness for studying the beautiful scenery around Concord; he spent much time in reading, especially the works of such authors as Sterne, Fielding, and Smollett, and he neglected no occasion to gratify his fondness for art. Was Jenny Lind to sing in Boston, was Paganini to play the violin in New York, or Fanny Ellsler to dance? It would go hard if the doctor did not get to one performance of the season.

Dr. Gage was a man of almost unalterable convictions in politics. A life-long Democrat, he could only with the greatest difficulty be brought to see anything good in the Republican party. In common with thousands in the North, he carried the doctrine of state rights to such lengths as to justify the rebellion of 1861 up to the very beginning of hostilities, but when the news came of the firing on Fort Sumter he, now again in common with thousands in the North, subordinated doctrine to patriotism. When the volunteers began to assemble in the camp on the eastern side of the Merrimack he was assiduous in his attendance as medical officer, and when measles made such havoc in the First New Hampshire Regiment he exerted himself to the extremity of his power the check to spread of the disease, which had shown itself in a very deadly form, and to carry relief and comfort to the sick. I think he continued in charge of the sanitary affairs of the camp as long as it was

used, assisted by several of the physicians of Concord. He was sometimes disgusted with the measures adopted by the government, and did not hesitate to speak his mind. I remember to have heard him say concerning a certain measure that was pending that he would emigrate to Canada if it was adopted. The measure was adopted, but the doctor remained in Concord; he was big-souled enough not to make an idol of consistency.

During the term of my intimate knowledge of Dr. Gage he hardly concerned himself with ecclesiastical matters, but he occasionally went to church, and I think he was always the holder of a pew in St. Paul's. His father had been a Congregationalist, and his mother a Baptist, but I fancy it was not solely on doctrinal grounds that he preferred the Episcopal church; he wanted things done "decently and in order," and of this the liturgy was to him a guarantee. It is certain that he was of a profoundly religious nature. Dr. Gage was a Mason, and attained to the degree of Knight Templar.

In this brief sketch I have endeavored to avoid mention of mere incidents except those that might serve to bring out the traits of the great man with whom it was my privilege to be associated. That he was a great man I think there can be no question. It is idle to speculate concerning the wider celebrity he would have acquired had he followed his career in a larger city; it is enough to record of him that he did his appointed work faithfully and well, that he was learned and ardent in his profession, that he was a public-spirited citizen, and that he was careful and considerate in his family relations. If I have mentioned some of his foibles, it is rather because I rejoice that he had them than for any other reason; as a friend of mine, a New York physician, lately said to me, "How refreshing it is to read of Washington's damning Lee at the Battle of Monmouth! It shows that, after all, he was human."

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PRESIDENT GOODHUE.—I believe we have one member who joined the society at the time Dr. Gage did. That is Dr. Hill. We would be glad to hear from him.

DR. HILL.—I was not aware that this paper was to be presented, but I am grateful to Dr. Foster for honorable mention of my friend. Dr. Gage was a classmate of mine and an intimate and highly esteemed friend during these many years. I think he and I were made members of this New Hampshire Medical Society in 1838. Dr. Gage was a very constant attendant upon the meetings, and always interested in its transactions. He held various offices in the society and in all discharged the duties devolving upon him in a manner that reflected honor upon himself and the society. Dr. Gage was an affable, companionable gentleman, and honorable member of this society and the medical profession. The paper presented does not too highly magnify his virtues, and I move a vote of thanks to the writer, and that the paper be referred to the committee of publication.

## ANNUAL MEETING, 1895.

### LIST OF THE FELLOWS OF THE NEW HAMPSHIRE MEDICAL SOCIETY.

N. B. The Secretary requests members to examine this list closely, and notify him of any corrections to be made, as it is intended to publish the roll of members annually, and it is desirable to make it as accurate as possible. *Members allowing themselves to become three years in arrears for dues will find their names dropped from the roll, as it is construed that they no longer desire to remain connected with the Society.* Members are not entitled to a copy of the Transactions until their dues are paid to the Treasurer. An asterisk (\*) indicates a retired member.

Admitted.	Name.	Residence.
1872.	Abbott, A. W. . . . .	Laconia.
1894.	Abbott, Clifton S. . . . .	Laconia.
1882.	Abbott, Edward . . . . .	Tilton.
1876.	*Abbott, O. D. . . . .	Manchester.
1894.	Achard, H. J. . . . .	Manchester.
1894.	Adams, Chancey . . . . .	Concord.
1873.	Adams, D. S. . . . .	Manchester.
1875.	Adams, Ira H. . . . .	Derry Depot.
1888.	Aldrich, W. H. . . . .	Marlborough.
1886.	Allen, Bradford . . . . .	Nashua.
1878.	Allen, Carl A. . . . .	Holyoke, Mass.
1890.	Allen, C. J. . . . .	Peterborough.
1886.	Allen, George E. . . . .	Bradford, Mass.
1895.	Andrews, E. B. . . . .	Ossipee.
1894.	Annable, Edwin G. . . . .	Concord.
1876.	Anthoine, I. G. . . . .	Nashua.
1871.	Atkinson, W. P. . . . .	Eaton.
1894.	Bartlett, Clarence S. . . . .	Manchester.

Admitted.	Name.	Residence.
1882.	Bancroft, Charles P.	Concord.
1885.	Bean, J. W.	West Medford, Mass.
1886.	Berry, John J.	Portsmouth.
1886.	Blair, A. W.	Dorchester, Mass.
1878.	Blaisdell, Frank	Goffstown.
1869.	Blaisdell, George C.	Contoocook.
1886.	Blake, Charles A.	State Farm, Mass.
1885.	Blake, W. P.	Springfield, Mass.
1889.	Blaylock, Ella	Nashua.
1894.	Bolster, Augustus S.	Belmont.
1879.	Boutwell, Henry T.	Manchester.
1883.	Boutwell, Henry W.	Manchester.
1889.	Boynton, O. H.	Lisbon.
1888.	Brigham, Frank E.	Salmon Falls.
1865.	Brown, J. Frank	Manchester.
1871.	Brown, J. P.	Taunton, Mass.
1892.	Burnett, Frank H.	Hinsdale.
1870.	*Burnham, A. C.	Hillsborough Bridge.
1856.	Burnham, Hosea B.	Manchester.
1894.	Burnham, John L.	Manchester.
1884.	Burns, Robert	Plymouth.
1880.	Butler, Jacob N.	Lempster.
1893.	Buzzell, C. P.	Northwood.
1891.	Cain, W. G.	Cambridgeport, Mass.
1856.	Carbee, S. P.	Haverhill.
1892.	Carpenter, Irving L.	Manchester.
1867.	Carr, E. L.	Pittsfield.
1869.	Carter, W. G.	Concord.
1869.	*Carlton, C. A.	Salem, Mass.
1870.	Carvelle, H. D. W.	Manchester.
1891.	Cheney, Jona M.	Ashland.
1867.	Child, William	New Hampton.
1894.	Cheever, Benjamin	Portsmouth.
1883.	Chesley, A. P.	Concord.
1892.	Clark, Edgar A.	Concord.
1876.	Cogswell, J. R.	Warner.
1892.	Colby, Frank A.	Berlin.
1865.	Conn, G. P.	Concord.
1892.	Cook, Edwin A.	Colebrook.
1869.	Cook, George	Concord.

Admitted.	Name.	Residence.
1891.	Crosby, Dixi . . . . .	Exeter.
1881.	*Cummings, A. R. . . . .	Claremont.
1845.	*Currie, T. H. . . . .	Lebanon.
1882.	Currier, E. H. . . . .	Manchester.
1873.	Currier, D. M. . . . .	Newport.
1873.	Cutter, George I. . . . .	West Swanzey.
1878.	Danforth, M. S. . . . .	Manchester.
1890.	Davis, George M. . . . .	Merrimack.
1890.	Day, Arthur K. . . . .	Concord.
1895.	Dean, E. E. . . . .	Lebanon.
1876.	Dearborn, D. S. . . . .	Milford.
1854.	*Dearborn, S. G. . . . .	Nashua.
1869.	Dinsmoor, S. M. . . . .	Keene.
1881.	Dinsmore, W. H. . . . .	Indiana Mineral Springs, Ind.
1878.	Dix, M. C. . . . .	Hinsdale.
1878.	Dodge, C. M. . . . .	Manchester.
1888.	Dodge, Henry . . . . .	Webster.
1893.	Downing, C. W. . . . .	Manchester.
1883.	Drake, C. B. . . . .	West Lebanon.
1894.	Eames, Fred H. . . . .	Manchester.
1840.	Eastman, J. C. . . . .	Hampstead.
1883.	Eastman, O. D. . . . .	Woodsville.
1879.	Emerson, A. L. . . . .	Chester.
1880.	Emery, Alfred E. . . . .	Penacook.
1889.	Erskine, James B. . . . .	Colebrook.
1866.	*Evans, Earl . . . . .	Winchester.
1878.	Fairbanks, C. A. . . . .	Dover.
1890.	Faulkner, H. K. . . . .	Keene.
1877.	Felt, M. H. . . . .	Hillsborough Bridge.
1883.	Fisher, E. C. . . . .	Sunapee.
1883.	Fisher, F. P. . . . .	Enfield Centre.
1883.	Flanders, Charles F. . . . .	Manchester.
1895.	Fontaine, Henry T. . . . .	Suncook.
1892.	Ford, Inez H. . . . .	Dover.
1868.	Foster, T. S. . . . .	Laconia.
1885.	French, Edward . . . . .	Concord.
1875.	French, L. M. . . . .	Manchester.
1893.	Frink, Lewis J. . . . .	Bartlett.

Admitted.	Name.	Residence.
1893.	Fitz, Emdon	Manchester.
1872.	Frost, Carlton P.	Hanover.
1893.	Frost, Gilman D.	Hanover.
1887.	Garland, William R.	Campton Village.
1882.	George, Charles F.	Goffstown.
1881.	Gibson, Charles R.	Woodsville.
1865.	Goodhue, D. P.	Springfield.
1853.	*Goss, Oliver,	Lakeport.
1886.	Goss, O. W	Lakeport.
1885.	Gould, Chas. R.	Tilton.
1855.	Gould, True M.	Raymond.
1883.	Gove, George S.	Whitefield.
1883.	Grant, L. E.	Somersworth.
1869.	Graves, E. E.	Boscawen.
1869.	*Graves, F. W.	Woburn, Mass.
1890.	Gray, George H.	Lynn, Mass.
1893.	Greeley, Guy H.	Hillsboro Bridge.
1893.	Greeley, James T.	Nashua.
1894.	Grimes, Warren P.	Northwood.
1892.	Guptil, George R.	Raymond.
1869.	Ham, J. R.	Dover.
1882.	Hammond, C. B.	Nashua.
1863.	Hanson, C. W.	Northwood Ridge.
1888.	Harriman, A. H.	Laconia.
1880.	Hatch, G. W.	East Wilton.
1888.	Hawkins, F. D.	Meredith.
1887.	Hayes, John A.	Somersworth.
1895.	Hazard, George S.	Hollis.
1893.	Heffenger, Arthur C.	Portsmouth.
1894.	Hill, Edmund E.	Suncook.
1839.	Hill, L. G.	Dover.
1890.	Hill, Roscoe	Epsom.
1886.	Hiland, Thomas	Concord.
1892.	Hodgdon, E. P.	Lakeport.
1888.	Hodsdon, E. W.	Centre Sandwich.
1882.	Hoitt, Geo. C.	Manchester.
1872.	Holbrook, Guy	Lowell, Mass.
1885.	Holbrook, Henry C.	Penacook.
1888.	Holcombe, C. H.	Brookline.

Admitted.	Name.	Residence.
1886.	Houghton, E. F. .	Claremont.
1891.	Hoyt, Jane E. .	Concord.
1889.	Humiston, F. G. .	East Jaffrey.
1882.	Hutchinson, H. S. .	Milford.
1890.	Hyland, Jesse B. .	Keene.
1892.	Ingalls, George H. .	Jamaica Plains, Mass.
1881.	Jackson, Joseph A. .	Manchester.
1884.	Jarvis, Leonard .	Claremont.
1876.	Jones, D. W. .	Tacoma Park, D. C.
1883.	Jones, F. P. .	Mill Village.
1887.	Jones, Fred W. .	New Ipswich.
1884.	Junkins, William O. .	Portsmouth.
1891.	Kean, M. E. .	Manchester.
1867.	*Kelley, C. K. .	Plymouth.
1886.	Kimball, George M. .	Concord.
1860.	*Kingsbury, C. F. .	West Medford, Mass.
1890.	Kittredge, Frank E. .	Nashua.
1893.	Lake, E. E. .	Hampstead.
1892.	Lamson, Charles A. .	Scytheville.
1882.	Lanouette, Joseph E. A. .	Manchester.
1869.	Larabee, G. H. .	Suncook.
1876.	Lathrop, M. C. .	Dover.
1889.	Leith, Wm. H. .	Lancaster.
1885.	Lemaitre, Joseph E. .	Manchester.
1884.	Leet, George E. .	Concord.
1891.	Leet, Jas. A. .	Enfield.
1895.	Littlefield, Anna M. .	New London.
1885.	Leonard, William S. .	Hinsdale.
1887.	Lougee, George W. .	Freedom.
1892.	Lovejoy, Chas. W. .	Concord.
1891.	Lyons, Wm. H. A. .	Portsmouth.
1854.	*Manahan, Val .	Enfield.
1890.	Marston, Enoch Q. .	Sandwich.
1894.	Matthews, W. C. .	Walpole.
1888.	McGregor, G. W. .	Littleton.
1892.	McMurphy, Nelson W. .	Concord.
1868.	McQuesten, E. F. .	Nashua.

Admitted.	Name.	Residence.
1887.	Megrath, Wm. A.	Loudon.
1888.	Merrill, J. F.	Franklin Falls.
1892.	Mitchell, Abram W.	Epping.
1882.	Mitchell, Ezra, Jr.	Lancaster.
1895.	Mitchell, Wm. Henry	Suncook.
1881.	Moffett, Frank T.	Littleton.
1893.	Moran, B. G.	Nashua.
1891.	Morey, G. B.	Manchester.
1892.	Morgan, George P.	Dover.
1882.	Morse, Charles A.	Newmarket.
1893.	Morrill, Leonard B.	Centre Harbor.
1880.	Morrill, S. C.	Concord.
1883.	Munsey, G. F.	Suncook.
1893.	Nason, Arthur C.	Newburyport, Mass.
1880.	*Nelson, D. B.	Laconia.
1887.	Newell, Henry E.	Derry Depot.
1873.	Nichols, C. B.	Sacramento, Cal.
1883.	O'Brien, C. C.	Groveton.
1868.	Odell, J. W.	Greenland.
1888.	Osgood, George E.	East Barrington.
1881.	Otis, E. O.	93 Mont Vernon St., Boston, Mass.
1874.	Palmer, Haven	Plymouth.
1885.	Parker, H. R.	Dover.
1868.	Parsons, John W.	Portsmouth.
1856.	*Pattee, Luther	Manchester.
1880.	Pattee, W. H.	Manchester.
1850.	*Peabody, L. W.	Henniker.
1879.	Perkins, F. B.	Derry Depot.
1889.	Petit, A. Wilfred	Nashua.
1884.	Pettengill, James B.	Amherst.
1893.	Pick, Albert	Barnstable, Mass.
1893.	Pitman, Arthur J.	Auburn.
1880.	Pray, J. W.	East Northwood.
1889.	Prichard, Kate E.	Nashua.
1883.	Prouty, Ira J.	Keene.
1894.	Quackenbos, John D.	New London.
1889.	Quimby, John Grant	Lakeport.

Admitted.	Name.			Residence.
1891.	Rawson, Geo. W.	.	.	Amherst, Mass.
1886.	Raynes, J. B.	.	.	Lebanon.
1894.	Reed, Elizabeth B.	.	.	Keene.
1877.	Richardson, A. P.	.	.	Walpole.
1895.	Richards, Caroline M.	.	.	Manchester.
1890.	Richmond, Allen P.	.	.	Dover.
1857.	Roberts, S. W.	.	.	Wakefield.
1851.	*Robinson, A. H.	.	.	Concord.
1887.	Robinson, John F.	.	.	Manchester.
1879.	Robinson, J. L.	.	.	Manchester.
1894.	Rowe, Frank H.	.	.	Bedford.
1878.	Russell, J. Wallace	.	.	Concord.
1869.	Russell, M. W.	.	.	Concord.
1888.	Saltmarsh, Geo. H.	.	.	Lakeport.
1884.	*Sanborn, C. A.	.	.	Redlands, Cal.
1880.	Sanborn, G. H.	.	.	Henniker.
1858.	Sanborn, J. H.	.	.	Franklin Falls.
1887.	Scott, N. H.	.	.	Wolfeborough.
1890.	Shea, A. W.	.	.	Nashua.
1888.	Smith, A. Noel	.	.	Dover.
1893.	Smith, Frank A.	.	.	Lebanon.
1888.	Smith, Henry O.	.	.	Hudson.
1870.	*Smith, J. Ranlet	.	.	Gloucester, Mass.
1879.	Smith, W. T.	.	.	Hanover.
1888.	Spaulding, F. W.	.	.	Clifton Springs, N. Y.
1892.	Stackpole, H. H.	.	.	Dover.
1844.	*Stackpole, P. A.	.	.	Dover.
1882.	Staples, J. W.	.	.	Franklin Falls.
1892.	Starr, Cornelius F.	.	.	Manchester.
1891.	Steel, Minot A.	.	.	Portsmouth.
1895.	Stickney, H. L.	.	.	Newport.
1875.	Stillings, F. A.	.	.	Concord.
1894.	St. Hilaire, Emilé	.	.	Concord.
1890.	Stokes, D. L.	.	.	Rochester.
1880.	Stone, M. T.	.	.	Troy.
1891.	Straw, Amos G.	.	.	Manchester.
1892.	Straw, Zatae Longsdorff	.	.	Manchester.
1876.	Sturtevant, C. B.	.	.	Manchester.
1891.	Sullivan, D. E.	.	.	Concord.
1891.	Swasey, Charles E.	.	.	

Admittted.	Name.	Residence.
1892.	Sweeney, Henry L.	Kingston.
1894.	Swett, Eddy B.	Goffstown Centre.
1841.	*Swett, J. L.	Newport.
1886.	Taft, A. H.	Winchester.
1893.	Thurber, M. T.	Grafton.
1877.	Tolles, C. W.	Claremont.
1895.	Towle, Fred S.	Portsmouth.
1890.	Towle, G. W.	Deerfield.
1878.	Towne, G. D.	Manchester
1874.	Tucker, E. M.	Canaan.
1890.	Tufts, Chas. A.	Dover.
1891.	Tuttle, Karl A.	Roxbury, Mass.
1844.	*Twitchell, G. B.	Keene.
1888.	Vittum, Stephen	Laconia.
1880.	Wade, E. A.	Salem Depot.
1887.	Wadleigh, W. K.	Hopkinton.
1878.	Walker, C. R.	Concord.
1893.	Wallace, Alonzo S.	Nashua.
1886.	Wallace, Ellen A.	Manchester.
1894.	Wason, Eugene	Milford.
1895.	Watson, George M.	Haverhill.
1879.	Watson, I. A.	Concord.
1860.	*Waterhouse, William	Barrington.
1887.	Way, Osman B.	Claremont.
1883.	Weaver, C. A.	New Boston.
1882.	Weymouth, G. W.	Lyme.
1845.	*Weymouth, H. A.	Andover.
1877.	Welch, S. N.	Sutton.
1894.	Wheat, Arthur F.	Manchester.
1893.	Wheet, Fred E.	Plover, Wis.
1853.	Wheeler, John	Pittsfield.
1890.	Willey, Bertram E.	E. Weymouth, Mass.
1878.	*Wilson, J. W.	Contoocook.
1889.	Woodman, M. S.	West Lebanon.
1883.	Woodward, J. N.	Nashua.
1879.	Young, Leander J.	Haverhill, Mass.

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